#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.05.90 Test oil : ISO-4113

Combination No. : 0 402 746 816

Injection pump

Pump designation : PES6P120A720RS7135 EP type number : 0 412 726 807

Governor

Governer design. : RQV325...875PA848

: -3K

Governer no. : 0 421 815 171

Cust. part No. : 313GC5173P18

Customer-spec. information

Customer : MACK TRUCKS
Motor : EM6-250L 4VH

Power KW : 186.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : + 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow 0.50$ 

Check

tolerance \*NW : \to 0.75

Start of delivery mark

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 10.85
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 164.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

A01

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s.

: 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60

Tolerance mm :  $\leftarrow$  0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +-3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

MILL GOVEKINOK

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30 Tolerance mm : +- 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.00 Tolerance mm : +- 0.20

Rated speed rpm : 850

guide sleeve

travel mm : 6.30 Tolerance mm : + 0.10

Rated speed rpm : 1000

guide sleeve

travel mm : 7.80 Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 164.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 56.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 930.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1025.0
Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1100

LOW IDLE

control lever

position degree : 13.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 6.10 Testing: Rated speed rpm : 325 rack travel mm : 4.60 : + 0.10Tolerance mm rack travel mm : 2.00 TORQUE CONTROL Rated speed rpm : 875 rack travel mm : 10.85 Tolerance mm : +- 0.05 : 510 Rated speed rpm : 13.10 rack travel mm Tolerance mm : + - 0.10: 700 Rated speed rpm : 11.70 rack travel mm Tolerance mm : + - 0.10Rated speed rpm : 550 rack travel mm : 6.55 Tolerance mm : +- 6.55 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 510 Pressure hPa : 1200 rack travel mm : 13.10 : + - 0.10Tolerance mm **MEASUREMENT** Rated speed rpm : 510 rack travel mm : 9.30 Tolerance mm : + 0.20: 215 Pressure hPa rack travel mm : 10.35 : +- 0.05 Tolerance mm : 435 Pressure hPa : 12.40 rack travel mm Tolerance mm : + 0.20

Aneroid pressure : 1200 : 510 Rated speed rpm Del. quantity cm3/1000 strokes : 243.00 Tolerance cm3/1000 strokes : + 3.00Check tolerance cm3/1000s. : + 6.00Spreed Tolerance cm3/1000 strokes : 8.00 Check tolerance cm3/1000s. : 12. Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 148.00 Tolerance cm3/1000 strokes : + 2.00Check tolerance cm3/1000s. : +- 4.00 STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.30 Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 185.00 Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

### LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : +- 0.10
Del. quantity
cm3/1000 strokes : 42.00

Tolerance : 42.00

Totel ance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 02.05.90 Edition Test oil : ISO-4113

Combination No. : 0 402 746 817

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...900PA848

: -4K

: 0 421 815 173 Governer no.

Cust. part No. : 313GC5173-P14

Customer-spec. information

Customer : MACK TRUCKS INC.

: EC6 350 4VH Motor

Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 temp. \*C : 40.0 Tolerance \*C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm : 10.50

Tolerance mm :  $\leftarrow$  1.50

: 1-5-3-6-2 Firing order

: - 4

Phasing : 0-60-120-180-240

: -300

: + 0.50Tolerance

Check

tolerance "NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.25 Tolerance mm : +-0.05

Del. quantity

cm3/1000 strokes : 251.00

Tolerance

cm3/1000 strokes : +- 1.00

A05

Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm: 5.00 Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 42.00 Tolerance  $c_{0}3/1000 \text{ strokes} : + 3.00$ Check tolerance cm3/1000s.: +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve travel mm : 1.30 : +- 0.10 Tolerance mm Rated speed rpm : 450 guide sleeve : 3.20 travel mm Tolerance mm : + 0.10Rated speed rpm : 850 auide sleeve : 6.00 travel mm : +- 0.10 Tolerance mm Rated speed rpm : 1000 guide sleeve : 7.60

control lever position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900 Aneroid pressure hPa : 1200

Del. quantity

cm3/1000 strokes : 251.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1900s. : 9.0

CONTROL LEVER

control lever

position degree : 60.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.20 Rated speed rpm : 955.0 Tolerance  $1/\min$ : +- 5.0

rack travel mm : 4.00 Rated speed rpm : 1105.0 Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50 Tolerance mm : **←** 0.50 Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 11.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 5.0

: + - 0.10

travel mm

Tolerance mm

Rated speed rpm : 275

CRT mm min. : 6.50

Testing:

Rated speed rpm : 325 rack travel mm : 5.00

Tolerance mm : +- 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 15.25 Tolerance mm : + 0.05

Rated speed rpm : 625 rack travel mm : 15.55 Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 15.50 Tolerance mm : +- 0.10

Rated speed rpm : 500 rack travel mm : 7.50 Tolerance mm : +- 7.50

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 1200
rack travel mm : 15.55
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 625

rack travel mm : 8.80 Tolerance mm : +- 0.20

Pressure hPa : 280 rack travel mm : 10.75 Tolerance mm : +- 0.05

Pressure hPa : 650 rack travel mm : 13.80 Tolerance mm : + 0.20 FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 625

Del. quantity

cm3/1000 strokes : 281.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 132.50

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.80 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 140.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.00

Check tolerance

cm3/1000s. :  $\leftarrow 30.00$ 

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.00
Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s.

: 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 818

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...875PA848

: -5K

Governer no. : 0 421 815 174

Cust. part No. : 313GC5173-P22

Customer-spec. information

Customer : MACK TRUCKS INC.

Motor

: EM 6 275L 4VH

Power KW

: 202.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. L/h : 165.0

Tolerance l/h: +5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

A09

Outside diameter : 6.00

x inside diameter: 2.00

x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.25

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 191.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance cm3/1000s. : +- 4.00Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance : 9.0 cm3/1000s. Rated speed rpm : 325.0 Rack travel in mm: 4.70 Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 40.00 Tolerance cm3/1000 strokes : +- 3.00Check tolerance cm3/1000s. : + 5.00Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.: 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm : +- 0.10 Tolerance mm Rated speed rpm : 450 guide sleeve travel mm : 2.95 Tolerance mm : + 0.15Rated speed rpm : 850 guide sleeve : 6.30 travel mm : +- 0.10 Tolerance mm Rated speed rpm : 1000 guide sleeve : 7.80 travel mm : + 0.10Tolerance mm GUIDE SLEEVE POSITION

control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 875 Aneroid pressure : 1200 Del. quantity cm3/1000 strokes : 191.00 Tolerance cm3/1000 strokes : + 1.00Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 56.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 930.0 Tolerance  $1/\min$ :  $\leftarrow$  5.0 : 4.00 rack travel mm Rated speed rpm : 1045.0 Tolerance 1/min : + 15.0 rack travel mm : 0.50 Tolerance mm : + - 0.50Rated speed rpm : 1150 LOW IDLE control lever : 13.0 position degree tolerance degree : +- 4.0 Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 4.70 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 875 rack travel mm : 12.25 Tolerance mm : + 0.05

Rated speed rpm : 510 rack travel mm : 14.20 Tolerance mm : + 0.10

Rated speed rpm : 700 rack travel mm : 13.30 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 6.90 Tolerance mm : + 6.90

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 14.20
Tolerance mm : ← 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 9.50
Tolerance mm : +- 0.10

Pressure hPa : 280
rack travel mm : 10.65
Tolerance mm : + 0.05

Pressure hPa : 485 rack travel mm : 13.00 Tolerance mm : + 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 265.50

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. :  $\leftarrow 6.00$ 

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 147.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.50 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 190.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. :  $\leftarrow 30.00$ 

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.70 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 40.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02,05.90 : ISO-4113

Combination No. : 0 402 746 818AA

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. :

Governer no.

: 0 421 815 ...

Cust. part No. : 313GC...

Customer-spec. information

Customer : MACK TRUCKS INC.

Motor

: EM 6 275L 4VH

Power KW

: 202.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. L/h

: 165.0

Tolerance l/h:  $\leftarrow 5.0$ 

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.25

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 191.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm: 4.70 Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 40.00 Tolerance cm3/1000 strokes : +- 3.00Check tolerance cm3/1000s. : + 5.00Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.: 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 auide sleeve : 1.10 travel mm Tolerance mm : + 0.10Rated speed rpm : 450 guide sleeve : 1.95 travel mm : + 0.15Tolerance mm : 850 Rated speed rpm guide sleeve : 6.50 travel mm

: +- 0.20 Tolerance mm : 1000 Rated speed rpm guide sleeve : 9.30 travel mm : + 0.20Tolerance mm GUIDE SLEEVE POSITION

control Lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 875 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 191.00 Tolerance cm3/1000 strokes : +- 1.00Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s.: 9.0 CONTROL LEVER control lever position degree : 61.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.20 Rated speed rpm : 930.0 Tolerance 1/min : +- 5.0 rack travel mm : 4.00 Rated speed rpm : 970.0 Tolerance 1/min : +- 15.0 rack travel mm : 0.50 : +- 0.50 Tolerance mm Rated speed rpm : 1150 LOW IDLE control lever position degree : 13.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 325

rack travel mm

Rated speed rpm

: 4.7

: 275

CRT mm min. : 5.30

Testing:

Rated speed rpm : 325 rack travel mm : 4.70 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 875 rack travel mm : 12.25 Tolerance mm : + 0.05

Rated speed rpm : 510 rack travel mm : 14.20 Tolerance mm : + 0.10

Rated speed rpm : 700 rack travel mm : 13.30 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 6.90 Tolerance mm : +- 6.90

ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 14.20
Tolerance mm : + 0.10

# **MEASUREMENT**

Rated speed rpm : 510

rack travel mm : 9.50
Tolerance mm : + 0.10

Pressure hPa : 280
rack travel mm : 10.65
Tolerance mm : + 0.05

Pressure hPa : 485 rack travel mm : 13.00 Tolerance mm : +- 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 265.50

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 147.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.00

Check tolerance

cm3/1000s. : +-4.00

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.50 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 190.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.70 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 40.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.05.90 Test oil : ISO-4113

Combination No. : 0 402 746 819

Injection pump

Pump designation : PES6P12OA72ORS7135 EP type number : 0 412 726 807

Governor

Governer design. : RQV325...875PA848

: -6K

Governer no. : 0 421 815 175

Cust. part No. : 313GC5173P26

Customer-spec. information

Customer : MACK TRUCKS
Motor : EM6-225L 4VH

Power KW : 165.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. L/h : 165.0 Tolerance L/h : +- 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +-0.50

Check

tolerance "NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.05
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 159.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

A17

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

: 325.0 Rated speed rpm

Rack travel in mm: 4.70 : + 0.10

Tolerance mm Del. quantity

cm3/1000 strokes : 41.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

: 1.30 travel mm : + 0.10Tolerance mm

: 450 Rated speed rpm

guide sleeve

: 3.00 travel mm : + 0.20Tolerance mm

: 850 Rated speed rpm

guide sleeve

travel mm : 6.30 : +- 0.10 Tolerance mm

Rated speed rpm : 1000

guide sleeve

: 7.80 travel mm : + 0.10Tolerance mm

GUIDE SLEEVE POSITION

control lever

position degree

FULL LOAD DELIVERY AT FULL LOAD STOP

: 875 Rated speed rpm

Aneroid pressure

: 1200 hPa

Del. quantity

cm3/1000 strokes : 159.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 56.0 tolerance degree : +- 4.0

RATED SPEED

: 10.00 rack travel mm Rated speed rpm : 930.0 Tolerance 1/min : **←** 5.0

: 4.00 rack travel mm Rated speed rpm : 1030.0 Tolerance 1/min : +- 15.0

: 4.00 rack travel mm

: 0.50 rack travel mm : +- 0.50 Tolerance mm Rated speed rpm : 1150

LOW IDLE

control lever

position degree : 13.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 : 4.7 rack travel mm

Rated speed rpm : 275 CRT mm min.

: 6.20

# Testing:

Rated speed rpm rack travel mm

: 325 : 4.70

Tolerance mm

: + 0.10

TORQUE CONTROL

Rated speed rpm

: 875

rack travel mm : 11.05 Tolerance mm

: + 0.05

Rated speed rpm

: 510

rack travel mm Tolerance mm

: 13.30

: + 0.10

Rated speed rpm

: 700

rack travel mm Tolerance mm

: 11.90

: + 0.10

Rated speed rpm rack travel mm

: 600 : 12.60

Tolerance mm

: + 0.10

Rated speed rpm

: 350

rack travel mm

: 6.60

Tolerance mm

: +- 6,60

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

: 510

Rated speed rpm Pressure hPa

: 1200

rack travel mm

: 13.30

Tolerance mm

: +- 0.10

# **MEASUREMENT**

Rated speed rpm

: 510

rack travel mm

Tolerance mm

: 8.70 : + 0.20

Pressure hPa

: 220

rack travel mm

: 9.75

Tolerance mm

: + - 0.05

Pressure hPa

: 500

rack travel mm

: 12.20

Tolerance mm

: +- 0.20

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 1200

Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 237.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance cm3/1000s.

: + 6.00

Spreed

Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s.

: 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 133.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s.: +- 4.00

# STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 8.70

: + 0.20

Tolerance mm

Del. quantity

cm3/1000 strokes : 155.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s.

: +- 30.00

# LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm: 4.70

Tolerance mm

: + 0.10

Del. quantity

cm3/1000 strokes : 41.00

cm3/1000s.

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

: **←** 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 820

Injection pump

Pump designation : PES6P120A720RS7135 EP type number : 0 412 726 807

Governor Governer design. : RQV325...850PA878K

Governer no. : 0 421 815 177

Cust. part No. : 313GC5173-P4

Customer-spec. information

Customer : MACK TRUCKS INC.

: E6 275 4VH Motor

Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. \*C : 40.0

Tolerance \*C : + 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. L/h : 165.0 Tolerance L/h : + 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : +-1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm: 12.05

Tolerance mm : +-0.05

Del. quantity

cm3/1000 strokes : 182.00

Tolerance

cm3/1000 strokes : +- 1.00

15A

Check tolerance cm3/1000s. : +-4.00Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.G Rated speed rpm : 325.0 Rack travel in mm : 4.60 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 35.00 Tolerance cm3/1000 strokes : + 3.00Check tolerance cm3/1000s.: + 5.00Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance : 12.0 cm3/1000s. (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm : +- 0.10Tolerance mm Rated speed rpm : 450 guide sleeve : 2.95 travel mm Tolerance mm : +- 0.15 Rated speed rpm : 850 quide sleeve travel mm : 6.30 Tolerance mm : + 0.10Rated speed rpm : 1000 auide sleeve : 7.80 travel mm : + 0.10Tolerance mm GUIDE SLEEVE POSITION

control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP : 850 Rated speed rpm Aneroid pressure : 900 Del. quantity cm3/1000 strokes : 182.00 Tolerance cm3/1000 strokes : +- 1.00Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 56.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 11.00 Rated speed rpm : 905.0 Tolerance  $1/\min$ :  $\leftarrow$  5.0 : 4.00 rack travel mm Rated speed rpm : 1040.0 Tolerance  $1/\min$ :  $\leftarrow$  15.0 rack travel mm : 0.50 : **←** 0.50 Tolerance mm : 1150 Rated speed rpm LOW IDLE control lever position degree : 11.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.6 Rated speed rpm : 275 CRT mm min. : 1.50

Testing:

: 325 Rated speed rpm rack travel mm : 4.60 : + 0.10Tolerance mm

TORQUE CONTROL

Rated speed rpm : 850 : 12.05 rack travel mm Tolerance mm : + 0.05

Rated speed rpm : 600 : 12.65 rack travel mm Tolerance mm : +- 0.05

: 700 Rated speed rpm : 12.60 rack travel mm : + 0.10Tolerance mm

: 500 Rated speed rpm : 6.20 rack travel mm Tolerance mm : +- 6.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

: 600 Rated speed rpm : 900 Pressure hPa rack travel 論 : 12.65 Tolerance mm : +- 0.05

**MEASUREMENT** 

Rated speed rpm : 600

rack travel mm : 9.70 Tolerance mm : + 0.20

Pressure hPa : 215 rack travel mm : 10.35 : +- 0.05 Tolerance mm

Pressure hPa : 360 : 11.70 rack travel mm : +- 0.20 Tolerance mm

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 900 hPa Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 213.50

Tolerance

cm3/1000 strokes :  $\leftarrow 3.00$ 

Check tolerance

cm3/1000s. : + 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

: 400 Rated speed rom

Del. quantity

cm3/1000 strokes : 146.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.70 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 180.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm: 4.60 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : + 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 821

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...850PA878

: -1K

Governer no.

: 0 421 815 178

Cust. part No. : 313GC5173-P8

Customer-spec. information

Customer : MACK TRUCKS INC.

Motor

: E6 300 4VH

Power KW

: 224.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : + 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : + 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.95

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 201.00

Tolerance

cm3/1000 strokes : + 1.00

A25

Check tolerance : +- 4.00 cm3/1000s.Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 : 325.0 Rated speed rpm Rack travel in mm : 4.60 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 35.00 Tolerance cm3/1000 strokes : + 3.00 Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance : 12.0 cm3/1000S.

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30 Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 2.95
Tolerance mm : + 0.15

Rated speed rpm : 850

guide sleeve

travel mm : 6.30 Tolerance mm : + 0.10

Rated speed rpm : 1000

guide sleeve

travel mm : 7.80
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever

position degree : -1

### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure

hPa : 900

Del. quantity

cm3/1000 strokes : 201.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

# CONTROL LEVER

control lever

position degree : 56.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 905.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1040.0
Tolerance 1/min : +- 15.0

 $\begin{array}{lll} \text{rack travel mm} & : 0.50 \\ \text{Tolerance mm} & : \leftarrow 0.50 \\ \text{Rated speed rpm} & : 1100 \\ \end{array}$ 

#### LOW IDLE

control lever

position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 4.60 : + 0.10Tolerance mm

TORQUE CONTROL

Rated speed rpm : 850 rack travel mm : 12.95 Tolerance mm : +- 0.05

Rated speed rpm : 700 rack travel mm : 13.40 Tolerance mm : + 0.10

Rated speed rpm : 600 rack travel mm : 13.60 Tolerance mm : +- 0.10

Rated speed rpm : 500 rack travel mm : 6.55 Tolerance mm : +- 6.55

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600 Pressure hPa : 900 rack travel mm : 13.60 : + 0.10Tolerance mm

**MEASUREMENT** 

: 600 Rated speed rpm

: 10.10 rack travel mm : + 0.20Tolerance mm

Pressure hPa : 250 rack travel mm : 10.95 Tolerance mm : + 0.05

Pressure hPa : 475 rack travel mm : 12.80 Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 220.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 6.00

Aneroid pressure

hPa : 900 Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 236.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +-6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.00

Aneroid pressure

hPa : )

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 156.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 : 10.10 rack travel mm Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 215.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

: +- 30.00 cm3/1000S.

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60 Tolerance mm : +- 0.10

Del. quantity cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes : - 3.00

Check tolerance cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

: 12.0 cm3/1000s.

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 822

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...900PA878

: -2K

Governer no. : 0 421 815 179

Cust. part No. : 3136C5173-P12

Customer spec. information

Customer : MACK TRUCKS INC.

Motor

: E6 350 4VH

Power KW

: 261.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. L/h : 165.0 Tolerance L/h : +- 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 008

B01

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Firing order

: 1- 5- 3- 6- 2

Phasing

: 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50 Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.95 Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 237.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s.

: 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.10

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s.: +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.: 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30 : + 0.10Tolerance mm

Rated speed rpm : 450

guide sleeve

: 3.20 travel mm : +- 0.10 Tolerance mm

Rated speed rpm : 850

guide sleeve

: 6.00 travel mm : **←** 0.10 Tolerance mm

: 1000

Rated speed rpm

guide sleeve

travel mm : 7.60 : + 0.10Tolerance mm

GUIDE SLEEVE POSITION

control lever

: -1 position degree

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 900

Del. quantity

cm3/1000 strokes : 237.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s.: +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s.: 9.0

CONTROL LEVER

control lever

position degree : 59.0 tolerance degree : +- 4.0

RATED SPEED

: 12.90 rack travel mm Rated speed rpm : 955.0

Tolerance  $1/\min$ : +-5.0

rack travel mm : 4.00 : 1090.0 Rated speed rpm

Tolerance 1/min : +- 15.0

rack travel mm : 0.50

Tolerance mm : +- 0.50 Rated speed rpm : 1150

LOW IDLE

control lever

position degree : 11.0 tolerance degree : + 4.0

Setting point w/out bumper spring

: 325 Rated speed rpm

rack travel mm

Rated speed rpm : 275

CRT mm min. : 1.50

**B02** 

# Testing:

Rated speed rpm : 325 rack travel mm : 4.10 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 13.95 Tolerance mm : + 0.05

Rated speed rpm : 625 rack travel mm : 14.15 Tolerance mm : + 0.05

Rated speed rpm : 800 rack travel mm : 14.05 Tolerance mm : + 0.05

Rated speed rpm : 500 rack travel mm : 6.75 Tolerance mm : +- 6.75

ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 625
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : + 0.05

### **MEASUREMENT**

Rated speed rpm : 625

rack travel mm : 8.50 Tolerance mm : + 0.20

Pressure hPa : 275 rack travel mm : 10.05 Tolerance mm : + 0.05

Pressure hPa : 570 rack travel mm : 12.50 Tolerance mm : +- 0.20

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 625 Del. quantity

cm3/1000 strokes : 260.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed

Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 138.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.00

Check tolerance

cm3/1000s. : +- 4.00

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.50 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 160.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. : +- 30.00

### LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.10 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. :  $\leftarrow 5.00$ 

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 02.05.90 Test oil : ISO-4113

Combination No. : 0 402 746 823

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...875PA878

: -3K

: 0 421 815 180 Governer no.

Cust. part No. : 313GC5173-P24

Customer-spec. information

Customer : MACK TRUCKS INC.

: EM6 275L 4VH Motor

Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C

Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

**B05** 

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : +-0.10

Rack travel in mm: 10.50

Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.25

: +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 191.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance cm3/1000S. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm : 4.70 : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 40.00 Tolerance cm3/1000 strokes : + 3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm Tolerance mm : +- 0.10 Rated speed rpm : 450 quide sleeve : 2.95 travel mm : + 0.15Tolerance mm Rated speed rpm : 850 auide sleeve : 6.30 travel mm : + 0.10Tolerance mm : 1000 Rated speed rpm guide sleeve : 7.80 travel mm Tolerance mm : +- 0.10

control lever position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 191.00

Tolerance

cm3/1000 strokes :  $\leftarrow 1.00$ 

Check tolerance

cm3/1000s. :  $\leftarrow 4.00$ 

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 56.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 930.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1045.0
Tolerance 1/min : +- 15.0

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1150

LOW IDLE

control lever

position degree : 13.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.7

Rated speed rpm : 275

GUIDE SLEEVE POSITION

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 4.70 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm: : 875 rack travel mm : 12.25 Tolerance mm : + 0.05

Rated speed rpm : 510 rack travel mm : 14,20 Tolerance mm : + 0,10

Rated speed rpm : 700 rack travel mm : 13.30 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 6.90 Tolerance mm : + 6.90

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 14.20
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 9.50
Tolerance mm : + 0.10

Pressure hPa : 280
rack travel mm : 10.65
Tolerance mm : + 0.05

Pressure hPa : 485 rack travel mm : 13.00 Tolerance mm : + 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 265.50

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 3.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 147.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. :  $\leftarrow 4.00$ 

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.50 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 190.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.70
Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 40.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : + 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.05.90 : ISO-4113 Edition Test oil

Combination No. : 0 402 746 824

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...875PA878

: -4K

Governer no. : 0 421 815 181

Cust. part No. : 313GC5173-P28

Customer-spec. information

Customer : MACK TRUCKS INC. : EM6 225L 4VH : 165.0 Motor

Power KW

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. L/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.05 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 159.00

Tolerance

cm3/1000 strokes : + 1.00

B09

Check tolerance cm3/1000s.: +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 : 325.0 Rated speed rpm Rack travel in mm : 4.70 : + 0.10Tolerance mm Del. quantity cm3/1000 strokes : 41.00 Tolerance cm3/1000 strokes : + 3.00Check tolerance cm3/1000s.: +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.: 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm Tolerance mm : +- 0.10 Rated speed rpm : 450 auide sleeve : 2.95 travel mm Tolerance mm : +- 0.15 Rated speed rpm : 850 guide sleeve : 6.30 travel mm : +- 0.10Tolerance mm Rated speed rpm : 1000 guide sleeve : 7.80 travel mm : + 0.10Tolerance mm GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure
hPa : 900

Del. quantity cm3/1000 strokes : 159.00 Tolerance

cm3/1000 strokes : +- 1.00 Check tolerance cm3/1000s. : +- 4.00

Spreed Tolerance

cm3/1000 strokes : 5.0 Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 55.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.00
Rated speed rpm : 930.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1030.0
Tolerance 1/min : +- 15.0

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

LOW IDLE

control lever

position degree : 13.0 tolerance degree :  $\leftarrow 4.0$ 

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min.

: 1.50

### Testina:

Rated speed rpm

: 325

rack travel mm

: 4.70

Tolerance mm

: +-0.10

TORQUE CONTROL

Rated speed rpu

: 375

rack travel mm Tolerance mm

: 11.05 : +- 0.05

Rated speed rpm

: 510

rack travel mm Tolerance mm

: 13.30 : + - 0.10

Rated speed rpm

: 600

rack travel mm

: 12.60

Tolerance mm

: + 0.10

Rated speed rom rack travel mm

: 700

Tolerance mm

: 11.90 : +- 0.10

Rated speed rpm rack travel mm

: 350

Tolerance mm

: 6.60 : +- 6.60

ANEROID/ALTITUDE

# COMPENSATOR TEST

#### SETTING

Rated speed rpm

: 510

Pressure hPa

: 900

rack travel mm : 13.30

Tolerance mm

: +- 0.10

#### **MEASUREMENT**

Rated speed rpm

: 510

rack travel mm

: 8.70

Tolerance mm

: + 0.20

Pressure hPa

: 220

rack travel mm

Tolerance mm

: 9.75 : +- 0.05

Pressure hPa

: 500

rack travel mm

: 12.20

Tolerance mm

: +- 0.20

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa

Rated speed rpm

: 900 : 510

Del. quantity cm3/1000 strokes : 237.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s.

: +- 6.00

Spreed

Tolerance

cm3/1000 strokes : 8.00

Check tolerance

 $cm3/1000S_{*}$ : 12.

Rated speed rpm : 400

pel. quantity

cm3/1000 strokes : 133.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. : +- 4,00

## STARTING FUEL DELIVERY

Rated speed rpm : 100

rack travel mm : 8.70 : +- 0.20 Tolerance mm

Del. quantity

cm3/1000 strokes : 155.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm: 4.70 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 41.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s.

: +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 02.05.90 : ISO-4113

Combination No. : 0 402 746 825

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...900PA878

: -5K

Governer no.

: 0 421 815 182

Cust. part No. : 313GC5173-P16

Customer-spec. information

Customer : MACK TRUCKS INC. : E C 6 350 4VH Motor

Power KW

: 261.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance \*C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h:  $\leftarrow 5.0$ 

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Firing order : 1-5- 3- 6- 2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.05

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 251.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

**B13** 

Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance : 9.0 cm3/1000s. Rated speed rpm : 325.0 Rack travel in mm: 5.00 Tolerance mm : + - 0.10Del. quantity cm3/1000 strokes : 42.00 Tolerance cm3/1000 strokes : +- 3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm : + 0.10Tolerance mm Rated speed rom : 450 guide sleeve travel mm : 3.20 : + 0.10Tolerance mm Rated speed rpm : 850 auide sleeve travel mm : 6.00 : + - 0.10Tolerance mm Rated speed rpm : 1000 auide sleeve travel mm : 7.60 Tolerance mm : + 0.10

Rack travel in mm : 10.00 : +- 3.00 Tolerance mm FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 251.00 Tolerance cm3/1000 strokes : +- 1.00Check tolerance cm3/1000s.: +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 60.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 10.0 Rated speed rpm : 1130 : 14.00 rack travel mm Rated speed rpm : 955.0 : +- 5.0 Tolerance 1/min rack travel mm : 4.00 : 1095.0 Rated speed rpm Tolerance 1/min : +- 15.0 rack travel mm : 4.00 rack travel mm : 0.50 Tolerance mm : <del>+-</del> 0.50 Rated speed rpm : 1200 LOW IDLE control lever

position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 1130

GUIDE SLEEVE POSITION

control lever

position degree : -1

Rated speed rpm : 325 rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.60

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 15.05 Tolerance mm : +- 0.05

Rated speed rpm : 625 rack travel mm : 15.45 Tolerance mm : +- 0.05

Rated speed rpm : 700 rack travel mm : 15.35 Tolerance mm : +- 0.05

Rated speed rpm : 500 rack travel mm : 7.50 Tolerance mm : +- 7.50

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 1200
rack travel mm : 15.45
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 625

rack travel mm : 8.50 Tolerance mm : +- 0.20

Pressure hPa : 280 rack travel mm : 10.45 Tolerance mm : +- 0.05

Pressure hPa : 650 rack travel mm : 13.50 Tolerance mm : +- 0.20 FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 625

Del. quantity

cm3/1000 strokes : 275.50

Tolerance

cm3/1000 strokes : +3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 132.50

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.50 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 150.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.00 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance : 8.0 Check tolerance cm3/1000s. : 12.0 : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02,05,90 : ISO-4113

Combination No. : 0 402 746 826

Injection pump

Pump designation : PES6P120A720RS7135 EP type number : 0 412 726 807

Governor

Governer design. : RQV325...875PA878

: -6K

Governer no.

: 0 421 815 183

Cust. part No. : 313GC5173-P20

Customer-spec. information

Customer : MACK TRUCKS INC.

Motor

: EM6 250L 4VH

Power KW

: 186.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: <del>←</del> 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. L/h

: 165.0

Tolerance 1/h

: +- 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

**B17** 

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance

: + 0.50

Check

tolerance \*NW

: +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 10.85

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 164.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm : 4.60 : + 0.10Tolerance mm Del. quantity cm3/1000 strokes : 42.00 Tolerance cm3/1000 strokes : + 3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm : + 0.10 Tolerance mm Rated speed rpm : 450 guide sleeve : 3.00 travel mm Tolerance mm : + 0.20Rated speed rpm : 850 guide sleeve : 6.30 travel mm : + 0.10Tolerance mm Rated speed rpm : 1000 guide sleeve

: 7.80

: + 0.10

control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875 Aneroid pressure

hPa

: 1200

Del. quantity

cm3/1000 strokes : 164.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s.: 9.0

CONTROL LEVER

control lever

position degree : 56.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.80 Rated speed rpm : 930.0 Tolerance 1/min : +- 5.0

rack travel mm : 4.00 Rated speed rpm : 1025.0 Tolerance 1/min : + 15.0

rack travel mm : 0.50 : +- 0.50 Tolerance mm Rated speed rpm : 1100

LOW IDLE

control lever

position degree : 13.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.6

Rated speed rpm : 275

GUIDE SLEEVE POSITION

travel mm Tolerance mm CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 875 rack travel mm : 10.85 Tolerance mm : +- 0.05

Rated speed rpm : 510 rack travel mm : 13.10 Tolerance mm : + 0.10

Rated speed rpm : 700 rack travel mm : 11.70 Tolerance mm : + 0.10

Rated speed rpm : 550 rack travel mm : 6.55 Tolerance mm : +- 6.55

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.10
Tolerance mm : +- 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 8.80
Tolerance mm : +- 0.20

Pressure hPa : 215 rack travel mm : 10.35 Tolerance mm : + 0.05

Pressure hPa : 435 rack travel mm : 12.40 Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 243.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +-6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 148.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.80 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 165.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

ineck tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 828

Injection pump

Pump designation: PES6P120A720RS7148

EP type number : 0 412 726 810

Governor

Governer design. : RQV325...875PA878

: -7K

Governer no.

: 0 421 815 184

Cust. part No. : 313GC5174-P4

Customer-spec. information

Customer : MACK TRUCKS INC.

Motor

: EM6 300L 4VH

Power KW

: 224.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. L/h

: 165.0

Tolerance l/h: +- 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 008

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Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : +-0.10

Rack travel in mm: 7.00

Tolerance mm : +-1.00

Firing order : 1-5-3-6-2 : - 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: + 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.15

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm: 4.60 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 42.00 Tolerance cm3/1000 strokes : +- 3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm : +- 0.10 Tolerance mm Rated speed rpm : 450 guide sleeve travel mm : 2.65 Tolerance mm : +- 0.15 Rated speed rpm : 600 guide sleeve travel mm : 4.20 Tolerance mm : +- 0.10 Rated speed rpm : 875 guide sleeve : 7.40 travel mm Tolerance mm : + - 0.10Rated speed rpm : 1000 guide sleeve

: 8.85

Tolerance mm : +-0.15GUIDE SLEEVE POSITION control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 875 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 200.00 Tolerance cm3/1000 strokes : + 1.00Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 59.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 10.10 Rated speed rpm : 920.0 Tolerance  $1/\min$ : + 5.0rack travel mm : 4.00 Rated speed rpm : 1015.0 Tolerance 1/min : +- 15.0 rack travel mm : 0.50 : +- 0.50 Tolerance mm Rated speed rpm : 1150 LOW IDLE control lever position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

travel mm

Rated speed rpm : 325 rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 4.50 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 875 rack travel mm : 11.15 Tolerance mm : + 0.05

Rated speed rpm : 510 rack travel mm : 16.60 Tolerance mm : + 0.10

Rated speed rpm : 700 rack travel mm : 13.40 Tolerance mm : + 0.10

Rated speed rpm : 600 rack travel mm : 15.60 Tolerance mm : +- 0.10

Rated speed rpm : 450 rack travel mm : 8.30 Tolerance mm : + 8.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1500
rack travel mm : 16.60
Tolerance mm : +- 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 8.50 Tolerance mm : +- 0.20

Pressure hPa : 370 rack travel mm : 10.75 Tolerance mm : +- 0.05

Pressure hPa : 710

rack travel mm : 14.60 Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 302.00

Tolerance

cm3/1000 strokes : +-3.00

Check tolerance

cm3/1000s. :  $\leftarrow 6.00$ 

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 154.50

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.50 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 150.00

Tolerance

cm3/1000 strokes : +- 10.00

Check tolerance

cm3/1000s. : +- 15.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance cm3/1000s. : + 5.00

Spreed Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.05.90 Test oil : ISO-4113

Combination No. : 0 402 746 829

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...1050PA848

: -8K

Governer no. : 0 421 815 185

Cust. part No. : 313GC5173P30

Customer-spec. information

Customer : MACK TRUCKS

Motor

: E6-270 4VH

Power KW

: 201.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : + 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : + 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check tolerance mm : + 0.10

Firing order

: 1-5-3-6-2 : - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.25

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 175.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.00

Check tolerance

cm3/1000s. : +- 4.00

**B25** 

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm: 5.00

Tolerance mm : + 0.10

Del. quantity

cin3/1000 strokes : 41.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s.: +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

: 12.0 cm3/1000s.

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

: 325 Rated speed rpm

guide sleeve

travel mm : 1.50

: +- 0.10 Tolerance mm

: 450 Rated speed rpm

guide sleeve

: 2.65 travel mm : +- 0.15 Tolerance mm

: 800 Rated speed rpm

guide sleeve

: 4.90 travel mm

: + 0.10Tolerance mm

: 1050 Rated speed rpm

guide sleeve

: 7.45 travel mm Tolerance mm : +- 0.15

Rated speed rpm : 1200

guide sleeve

: 9.50 travel mm

: +- 0.10 Tolerance mm

GUIDE SLEEVE POSITION

control lever

position degree : -1 Rated speed rpm : 1210

Rack travel in mm: 10.00

Tolerance mm :  $\leftarrow$  3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

: 1050 Rated speed rpm

Aneroid pressure

hPa : 900

Del. quantity

cm3/1000 strokes : 175.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s.: + 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000S.: 9.0

CONTROL LEVER

control lever

position degree : 59.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.0 Rated speed rpm : 1210

: 11.20 rack travel mm Rated speed rpm : 1095.0

: +- 5.0 Tolerance 1/min

rack travel mm : 4.00 : 1185.0 Rated speed rpm

Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50 Tolerance mm : +- 0.50

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 14.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.40

Testing:

Rated speed rpm : 325 rack travel mm : 5.00 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1050 rack travel mm : 12.25 Tolerance mm : + 0.05

Rated speed rpm : 630 rack travel mm : 12.10 Tolerance mm : + 0.10

Rated speed rpm : 925 rack travel mm : 12.00 Tolerance mm : + 0.10

Rated speed rpm : 800 rack travel mm : 12.30 Tolerance mm : + 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 630
Pressure hPa : 900
rack travel mm : 12.05
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 630

rack travel mm : 8.80
Tolerance mm : +- 0.20

Pressure hPa : 270
rack travel mm : 9.65
Tolerance mm : + 0.05

Pressure hPa : 400 rack travel mm : 11.25 Tolerance mm : + 0.25

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 630

Del. quantity

cm3/1000 strokes : 195.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.00

Check tolerance

cm3/1000s. :  $\leftarrow$  6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 131.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.80 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 155.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : + 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.00 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 41.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s.: +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 02.05.90 : ISO-4113 Test oil

Combination No. : 0 402 746 836

Injection pump

Pump designation : PES6P120A720RS7157

EP type number : 0 412 726 814

Governor

Governer design. : RQV325...900PA848

: -12K

Governer no. : 0 421 815 192

Cust. part No. : 313GC5179-P18

Customer-spec. information

Customer : MACK TRUCKS INC.

: E7 400 4VH Motor

: 298.0 Power KW

TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C Tolerance °C : +0.0

Overflow valve : 2 417 413 011

Overflow quantity

min. l/h : 165.0 Tolerance l/h : + 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 Tolerance bar  $: \leftarrow 1.5$ 

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.55 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 273.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s.: 9.0 Rated speed rpm : 325.0 Rack travel in mm : 5.00 : + 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 46.00 Tolerance cm3/1000 strokes : + 3.00Check tolerance cra3/1000s. : + 5.00Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL : 325 Rated speed rpm auide sleeve : 1.45 travel mm Tolerance mm : + 0.15Rated speed rpm : 500 guide sleeve : 3.70 travel mni Tolerance mm : **←** 0.30 : 900 Rated speed rpm guide sleeve travel mm : 6.80 : + 0.10Tolerance mm Rated speed rpm : 1075 guide sleeve : 8.65 travel mm Tolerance mm : +- 0.25 GUIDE SLEEVE POSITION

control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 900 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 273.00 Tolerance cm3/1000 strokes : + 1.00Check tolerance cm3/1000s.: +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 60,0 tolerance degree : + 4.0 RATED SPEED rack travel mm : 14.50 Rated speed rpm : 945.0 Tolerance 1/min : +- 5.0 rack travel mm : 4.00 Rated speed rpm : 1130.0 Tolerance 1/min : → 15.0 rack travel mm : 0.50 Tolerance mm : +- 0.50 : 1250 Rated speed rpm LOW IDLE control lever position degree : 14.0

tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 : 5.0 rack travel mm

Rated speed rpm : 275 CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 5.00 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 15.55 Tolerance mm : + 0.05

Rated speed rpm : 625 rack travel mm : 15.40 Tolerance mm : +- 0.10

Rated speed rpm : 500 rack travel mm : 7.30 Tolerance mm : +- 7.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 15.55
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 900

rack travel mm : 8.40 Tolerance mm : +- 0.20

Pressure hPa : 225 rack travel mm : 9.45 Tolerance mm : + 0.05

Pressure hPa : 770
rack travel mm : 14.00
Tolerance mm : + 0.20

Start interlock

Rated speed rpm : 280

Check

speed 1/min : 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 625

Del. quantity

cm3/1000 strokes : 312.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 168.00

Tolerance

cm3/1000 strokes : - 2.00

Check tolerance

cm3/1000s. :  $\leftarrow$  4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.10 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 190.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.00

Check tolerance

cm3/1000s. :  $\leftarrow 30.00$ 

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.00 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 46.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : - 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 02,05,90 : ISO-4113

Combination No.

: 0 402 746 837

Injection pump

Pump designation : PES6P120A720RS7157

EP type number : 0 412 726 814

Governor

Governer design. : RQV325...900PA848

: -15K

Governer no.

: 0 421 815 193

Cust. part No. : 313GC5179-P2

Customer-spec. information

Customer : MACK TRUCKS INC.

Motor

: E7 350 4VH

Power KW

: 261.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h

: 165.0

Tolerance 1/h

: + 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar :  $\leftarrow$  1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order

: 1-5-3-6-2 : - 4

Phasing : 0-60-120-180-240

: -300 : +- 0.50

Tolerance

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

: 900

BASIC SETTING

Rated speed rpm

Rack travel in mm : 14.05 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 229.00

Tolerance

cm3/1000 strokes : + 1.00

CO5

Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm: 5.40 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 44.00 Tolerance cm3/1000 strokes : +- 3.00Check tolerance : +- 5.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.45 travel mm Tolerance mm : + 0.15: 500 Rated speed rpm guide sleeve : 3.70 travel mm Tolerance mm : +- 0.30 Rated speed rom : 900 guide sleeve travel mm : 6.80 : + 0.10Tolerance mm : 1075 Rated speed rpm quide sleeve travel mm : 8.65 : **←** 0.25 Tolerance mm

control lever position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 900
Del. quantity

Del. quantity cm3/1000 strokes : 229.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. :  $\leftarrow 4.00$ 

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 60.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.00 Rated speed rpm : 955.0 Tolerance  $1/\min$  :  $\leftarrow$  5.0

rack travel mm : 4.00
Rated speed rpm : 1115.0
Tolerance 1/min : + 15.0

rack travel mm : 0.50Tolerance mm :  $\leftarrow 0.50$ Rated speed rpm : 1250

LOW IDLE

control lever

position degree : 14.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 5.4

Rated speed rpm : 275

GUIDE SLEEVE POSITION

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 : 5.40 rack travel mm Tolerance mm : + - 0.10

TORQUE CONTROL

: 900 Rated speed rpm : 14.05 rack travel mm Tolerance mm : +- 0.05

Rated speed rpm : 625 rack travel mm : 13.90 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 6.60 Tolerance mm : +- 6.60

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

: 900 Rated speed rpm Pressure hPa : 900 rack travel mm : 14.05 : + 0.05Tolerance mm

**MEASUREMENT** 

Rated speed rpm : 900

: 9.00 rack travel mm Tolerance mm : + 0.20

: 225 Pressure hPa : 10.25 rack travel mm Tolerance mm : +- 0.05

Pressure hPa : 545 : 12.90 rack travel mm Tolerance mm : +- 0.20

Start interlock

Rated speed rpm : 265

Check

: 275 speed 1/min

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 900 Rated speed rpm : 625

Del. quantity

cm3/1000 strokes : 263.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 168.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

: 100 Rated speed rpm : 10.60 rack travel mm : +- 0.20 Tolerance mm

Del. quantity

cm3/1000 strokes : 190.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.40 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 44.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

: +- 5.00 cm3/1000s. Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

**CO7** 

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 838

Injection pump

Pump designation : PES6P120A720RS7157

EP type number : 0 412 726 814

Governor

Governer design. : RQV325...875PA848

: -14K

Governer no.

: 0 421 815 194

Cust. part No. : 313GC5179-P26

Customer-spec. information

Customer

: MACK

Motor

: EM7-250L 4VH

Power KW

: 187.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h

: 165.0

Tolerance 1/h

: +- 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

: +- 1.5

Test Lines

: 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar  $: \leftarrow 1.0$ 

Prestroke mm : 2.80

Tolerance mm : +- 0.05

Check

tolerance mm : + - 0.10

: 1-5-3-6-2 Firing order

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 10.45

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 175.00

Tolerance

cm3/1000 strokes :  $\leftarrow 1.00$ 

Check tolerance

cm3/1000s.

: +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s.: 9.0

Rated speed rpm : 325.0

Rack travel in mm: 4.80

Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s.: +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.: 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

: 325 Rated speed rpm

guide sleeve

: 1.45 travel mm : + 0.15Tolerance mm

Rated speed rpm : 500

guide sleeve

: 3.70 travel mm : + 0.30Tolerance mm

: 900 Rated speed rpm

guide sleeve

: 6.80 travel mm : + 0.10Tolerance mm

Rated speed rpm : 1075

auide sleeve

: 8.65 travel mm Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

: 875 Rated speed rpm

Aneroid pressure

: 900 hPa

Del. quantity

cm3/1000 strokes : 175.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 58.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.40 Rated speed rpm : 920.0 Tolerance 1/min : +- 5.0

: 4.00 rack travel mm Rated speed rpm : 1035.0 Tolerance 1/min : +- 15.0

rack travel mm : 0.50 Tolerance man : +- 0.50 Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 16.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.30 Testing:

Rated speed rpm : 325 rack travel mm : 4.80 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 10.45
Tolerance mm : + 0.05

Rated speed rpm : 510
rack travel mm : 12.00
Tolerance mm : + 0.10

Rated speed rpm : 450 rack travel mm : 5.90 Tolerance mm : + 5.90

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 900
rack travel mm : 12.00
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 8.00 Tolerance mm : + 0.20

Pressure hPa : 235
rack travel mm : 8.85
Tolerance mm : + 0.05

Pressure hPa : 485 rack travel mm : 11.00 Tolerance mm : +- 0.20

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 247.00

Tolerance

 $cm3/1000 strokes : \leftarrow 3.00$ 

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 153.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.20 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 190.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adiustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 839

Injection pump

Pump designation : PES6P120A720RS7148

EP type number : 0 412 726 810

Governor

Governer design. : RQV325...875PA848

: -19K

Governer no.

: 0 421 815 199

Cust. part No. : 313GC5179-P6

Customer-spec. information

Customer : MACK

: EM7 300L 4VH Motor

Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0

Tolerance l/h: + 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80
Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 7.00

Tolerance mm : + 1.00

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm: 11.55

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 211.00

Tolerance

cm3/1000 strokes : + 1.00

**C13** 

Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm: 4.60 : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 44.00 Tolerance cm3/1000 strokes : +- 3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.: 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm : +- 0.10 Tolerance mm Rated speed rpm : 450 auide sleeve : 2.65 travel mm : + - 0.15Tolerance mm : 600 Rated speed rpm guide sleeve

: 4.20

: 875

: 7.40

: 1000

: 8.85

: +- 0.10

: + 0.10

GUIDE SLEEVE POSITION control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rom : 875 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 211.00 Tolerance cm3/1000 strokes : +- 1.00Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 61.0 tolerance degree : + 4.0 RATED SPEED rack travel mm : 10.50 Rated speed rpm : 920.0 Tolerance 1/min : + 5.0 rack travel mm : 4.00 Rated speed rpm : 1015.0 Tolerance  $1/\min$ :  $\leftarrow$  15.0 rack travel mm : 0.50 Tolerance mm : + 0.50Rated speed rpm : 1150 LOW IDLE control lever position degree : 12.0 tolerance degree : +- 4.0 Setting point w/out bumper spring

Tolerance mm : +-0.15

travel mm

travel mm

Tolerance mm

quide sleeve

Tolerance mm

Rated speed rpm

Rated speed rpm

guide sleeve travel mm

Rated speed rpm : 325 rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 11.55
Tolerance mm : + 0.05

Rated speed rpm : 510 rack travel mm : 16.10 Tolerance mm : + 0.10

Rated speed rpm : 800 rack travel mm : 12.10 Tolerance mm : + 0.10

Rated speed rpm : 600 rack travel mm : 15.20 Tolerance mm : + 0.10

Rated speed rpm : 450 rack travel mm : 7.85 Tolerance mm : +- 7.85

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 16.10
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 8.90 Tolerance mm : + 0.20

Pressure hPa : 325
rack travel mm : 10.65
Tolerance mm : +- 0.05

Pressure hPa : 815

rack travel mm : 14.50 Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 297.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 168.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. :  $\leftarrow 4.00$ 

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.90 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 175.00

Tolerance

cm3/1000 strokes : + 10.00

Check tolerance

cm3/1000s. : +- 20.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 44.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : **←** 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 02.05.90 Test oil : ISO-4113

Combination No. : 0 402 746 840

Injection pump

Pump designation : PES6F120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...875PA848

: -18K

: 0 421 815 198 Governer no.

Cust. part No. : 313GC5173-P32

Customer-spec. information

Customer : MACK

: EMC6 250L 4VH Motor

Power KW : 187.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C :  $\div$  2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

**C17** 

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar  $: \leftarrow 1.0$ 

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.25

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 174.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm : 4.60 : +- 0.10Tolerance mm Del. quantity cm3/1000 strokes : 42.00 Tolerance cm3/1000 strokes : + 3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve travel mm : 1.30 : + 0.10 Tolerance mm Rated speed rpm : 450 guide sleeve : 3.00 travel mm : +- 0.20 Tolerance mm : 850 Rated speed rpm guide sleeve : 6.30 travel mm : + 0.10Tolerance mm : 1000 Rated speed rpm guide sleeve : 7.80 travel mm : +- 0.10 Tolerance mm GUIDE SLEEVE POSITION

control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 875 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 174.00 Tolerance cm3/1000 strokes : + 1.00Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 58.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 10.20 : 920.0 Rated speed rpm Tolerance  $1/\min$ : + 5.0 rack travel mm : 4.00 Rated speed rpm : 1025.0 : +- 15.0 Tolerance 1/min rack travel mm : 0.50 Tolerance mm : +- 0.50 : 1100 Rated speed rpm LOW IDLE control lever position degree : 13.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 11.25
Tolerance mm : + 0.05

Rated speed rpm : 510 rack trayel mm : 13.20 Tolerance mm : + 0.10

Rated speed rpm : 700 rack travel mm : 12.10 Tolerance mm : + 0.10

Rated speed rpm : 450 rack travel mm : 6.55 Tolerance mm : + 6.55

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.20
Tolerance mm : +- 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 9.30 Tolerance mm : +- 0.20

Pressure hPa : 215
rack travel mm : 10.35
Tolerance mm : + 0.05

Pressure hPa : 435 rack travel mm : 12.40 Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 242.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.00

Check tolerance

cm3/1000s. :  $\leftarrow 6.00$ 

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 148.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.30 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 180.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 842

Injection pump

Pump designation : PES6P12OA72ORS7164

EP type number : 0 412 726 816

Governor

Governer design. : RQV325...875PA848

: -17K

Governer no.

: 0 421 815 200

Cust. part No. : 313GC5181P14

Customer-spec. information

Customer : MACK TRUCKS

Motor

: EMC6 300L 4VH

Power KW

: 200.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h

: 165.0

Tolerance L/h

: +- 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

: +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80

Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm: 12.50

Tolerance mm : +- 0.50

Firing order

: 1-5-3-6-2

: - 4

: 0-60-120-180-240 Phasing

: -300

Tolerance

: + 0.50

Check

tolerance \*NW

: + 0.75

Start of delivery mark

Barrel no.

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 14.95

Tolerance mm

: +- 0.05

Del. quantity

cm3/1000 strokes : 226.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30 Tolerance mm : +- 0.10

Rated speed rpm : 450

quide sleeve

travel mm : 3.20 Tolerance mm : +- 0.20

Rated speed rpm : 850

guide sleeve

travel mm : 6.00 Tolerance mm : +- 0.10

Rated speed rpm : 1000

auide sleeve

travel mm : 7.55 Tolerance mm : +- 0.15

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 226.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +-3.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 58.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.90
Rated speed rpm : 920.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00 Rated speed rpm : 1080.0 Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1160

LOW IDLE

control lever

position degree : 14.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325 rack travel mm : 4.80 Tolerance mm : + 0.10

rack travel imm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 16.95
Tolerance mm : + 0.05

Rated speed rpm : 510 rack travel mm : 17.00 Tolerance mm : + 0.10

Rated speed rpm : 700 rack travel mm : 15.80 Tolerance mm : + 0.10

Rated speed rpm : 600 rack travel mm : 16.70 Tolerance mm : + 0.10

Rated speed rpm : 420
rack travel mm : 8.40
Tolerance mm : + 8.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 17.00
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 11.10
Tolerance mm : +- 0.20

Pressure hPa : 375
rack travel mm : 12.75
Tolerance mm : + 0.05

Pressure hPa : 735 rack travel mm : 15.90

Tolerance mm : +-0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 310.00

Tolerance

cm3/1000 strokes :  $\leftarrow 3.00$ 

Check tolerance

cm3/1000s. :  $\leftarrow 6.00$ 

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 158.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 11.10 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 180.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/10GOS. : +- 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0

Sheck tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 846

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...850PA848

: -23K

Governer no.

: 0 421 815 204

Cust. part No. : 313GC5184-P6

Customer-spec. information

Customer : MACK TRUCKS

Motor

: E6 300 4VH

Power KW

: 224.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : ← 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm: + 0.10

Firing order : 1-5-3-6-2

: - 4

Phasing

: 0-60-120-180-240

: -300 : + 0.50

Tolerance

Check

tolerance \*NW

: ← 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.95

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 201.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

C25

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s.

: 9.0

Rated speed rpm : 325.0

Rack travel in mm: 4.60

: +-0.10Tolerance mm

Del. quantity

cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : + 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30 : + 0.10 Tolerance mm

: 450 Rated speed rpm

quide steeve

: 2.95 travel mm : +- 0.15 Tolerance mm

: 850 Rated speed rpm

guide sleeve

: 6.30 travel mm : + 0.10Tolerance mm

: 1000 Rated speed rpm

guide sleeve

: 7.80 travel mm Tolerance mm : + -0.10

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure

hPa : 900

Del. quantity cm3/1000 strokes : 201.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

: +- 4.00 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 54.0 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.90 Rated speed rpm : 905.0 Tolerance 1/min : + 5.0

rack travel mm : 4.00 : 1040.0 Rated speed rpm Tolerance 1/min : + 15.0

rack travel mm : 4.00

: 0.50 rack travel mm : **←** 0.50 Tolerance mm Rated speed rpm : 1100

LOW IDLE

control lever

position degree : 11.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : +- 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850 rack travel mm : 12.95 Tolerance mm : +- 0.05

Rated speed rpm : 700 rack travel mm : 13.65 Tolerance mm : + 0.05

Rared speed rpm : 600 rack travel mm : 13.85 Tolerance mm : + 0.05

Rated speed rpm : 500 rack travel mm : 6.80 Tolerance mm : + 6.80

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 13.85
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 600

rack travel mm : 10.40
Tolerance mm : + 0.10

Pressure hPa : 250
rack travel mm : 11.25
Tolerance mm : + 0.05

Pressure hPa : 475
rack travel mm : 13.10
Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 240.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 156.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.40 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 215.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

loterance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.05.90 Test oil : ISO-4113

Combination No. : 0 402 746 847

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...850PA878

: -8K

Governer no. : 0 421 815 205

Cust. part No. : 313GC5184-P8

Customer-spec. information

Customer : MACK TRUCKS : E6 300 4VH Motor

Power KW : 224.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

Test oil inlet temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

: + 0.10tolerance mm

Firing order : 1-5-3-6-2

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.95 Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 201.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : + 4.00

D01

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm: 4.60 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : → 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.: 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

: 1.30 travel mm Tolerance mm : +- 0.10

: 450 Rated speed rpm

quide sleeve

: 2.95 travel mm

Tolerance mm : + 0.15

Rated speed rpm : 850

guide sleeve

travel mm : 6.30 : + 0.10Tolerance mm

: 1000

Rated speed rpm

guide sleeve : 7.80 travel mm

: + 0.10Tolerance mm

GUIDE SLEEVE POSITION

control lever

position degree

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure

hPa : 900

Del. quantity

cm3/1000 strokes : 201.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s.: +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s.: 9.0

CONTROL LEVER

control lever

: 54.0 position degree tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.90 Rated speed rpm : 905.0 Tolerance 1/min : +- 5.0

rack travel mm : 4.00 : 1040.0 Rated speed rpm Tolerance 1/min : <del>+-</del> 15.0

rack travel mm : 4.00

: 0.50 rack travel mm Tolerance mm : +- 0.50 Rated speed rpm : 1100

LOW IDLE

control lever

position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

: 325 Rated speed rpm rack travel mm : 4.6

Rated speed rpm : 275 CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

: 850 Rated speed rpm : 12.95 rack travel nm Tolerance mm : +- 0.05

Rated speed rpm : 700 rack travel mm : 13.65 : +- 0.05 Tolerance mm

: 600 Rated speed rpm rack travel mm : 13.85 Tolerance mm : +- 0.05

Rated speed rpm : 500 rack travel mm : 6.80 Tolerance mm : +- 6.80

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600 Pressure hPa : 900 : 13.85 rack travel mm Tolerance mm : +- 0.05

**MEASUREMENT** 

Rated speed rpm : 600

rack travel mm : 10.40 Tolerance mm : + 0.10

Pressure hPa : 250 : 11.25 rack travel mm Tolerance mm : +- 0.05

Pressure hPa : 475 : 13.10 rack travel mm Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 900 hPa Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 240.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : + 6.00

Spreed

Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

: 400 Rated speed rpm

Del. quantity

cm3/1000 strokes : 156.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

: 100 Rated speed rpm rack travel mm : 10.40 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 215.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000S.: + 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.: 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.05.90 Edition : ISO-4113 Test oil

Combination No. : 0 402 746 848

Injection pump

Fump designation : PES6P12UA72ORS7135 EP type number : 0 412 726 807

Governor

Governer design. : RQV325...900PA878

: -9%

Governer no. : 0 421 815 206

Cust. part No. : 313GC5184-P12

Customer-spec. information

Customer : MACK TRUCKS INC.

: E6-350 Motor Power KW : 261.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 ÷ 2.0 Tolerance °C

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0 : +- 0.05

Check

tolerance mm : +-0.10

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance "NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.85 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 249.00

Tolerance

cm3/1000 strokes : +-1.00

Check tolerance

cm3/1000s. : +- 4.00

005

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.00 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30 Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.20 Tolerance mm : + 0.10

Rated speed rpm : 850

guide sleeve

travel mm : 6.00 Tolerance mm : + 0.10

Rated speed rpm : 1000

guide sleeve

travel mm : 7.60 Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 249.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed Tolerance

m7/1000 cenchos

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 60.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.80 Rated speed rpm : 955.0 Tolerance 1/min :  $\leftarrow 5.0$ 

rack travel mm : 4.00 Rated speed rpm : 1090.0 Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 5.0

Rated speed rpm : 275

D06

CRT mm min. : 6.60

Testing:

Rated speed rpm : 325 rack travel mm : 5.00 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 14.85 : +- 0.05 Tolerance mm

Rated speed rpm : 625 : 15.25 rack travel mm Tolerance mm : +- 0.05

Rated speed rpm : 700 rack travel mm : 15.05 : + 0.05Tolerance mm

Rated speed rpm : 500 rack travel mm : 7.45 : +- 7.45 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 625 : 1200 Pressure hPa : 15.25 rack travel mm : +- 0.05 Tolerance mm

**MEASUREMENT** 

Rated speed rom : 625

rack travel mm : 8,50 : + 0.20 Tolerance mm

: 310 Pressure hPa : 10.25 rack travel mm : +- 0.05 Tolerance mm

Pressure hPa : 710 : 13.90 rack travel mm : + 0.20Tolerance mm

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 1200 Rated speed rpm : 625

Del. quantity

cm3/1000 strokes : 274.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed

Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s.: 12.

: 400 Rated speed rpm

Del. quantity

cm3/1000 strokes : 132.50

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.50 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 150.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.00 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s.: +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.: 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 849

Injection pump

Pump designation : PES6P120A720RS7135

EP type number : 0 412 726 807

Governor

Governer design. : RQV325...850PA878

: -10K

Governer no. : 0 421 815 209

Cust. part No. : 313GC5184-P4

Customer-spec, information

Customer : MACK TRUCKS Motor : E6 275 4VH

: 202.0 Power KW

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : + 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

009

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : **←** 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.95 Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 184.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s.

: 9.0

: 325.0 Rated speed rpm

Rack travel in mm : 4.60

: + 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

: 1.30 travel mm : +- 0.10 Tolerance mm

Rated speed rpm : 450

guide sleeve

travel mm : 2.95 : +- 0.15 Tolerance mm

Rated speed rpm : 850

guide sleeve

travel mm : 6.30 : + 0.10 Tolerance mm

Rated speed rpm : 1000

guide sleeve

travel mm : 7.80

: + 0.10Tolerance mm

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure

hPa : 900

Del. quantity

cm3/1000 strokes : 184.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 54.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.90 Rated speed rpm : 905.0

Tolerance 1/min : ← 5.0

rack travel mm : 4.00 Rated speed rpm : 1040.0 Tolerance  $1/\min$  : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50

: +- 0.50 Tolerance mm

Rated speed rpm : 1100

LOW IDLE

control lever

position degree : 11.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.6

Rated speed rpm : 275

D10

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 4.60 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 12.85 Tolerance mm : + 0.05

Rated speed rpm : 600 rack travel mm : 13.05 Tolerance mm : + 0.05

Rated speed rpm : 500 rack travel mm : 6.40 Tolerance mm : +- 6.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 13.05
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 600

rack travel mm : 10.40
Tolerance mm : + 0.10

Pressure hPa : 225
rack travel mm : 11.05
Tolerance mm : + 0.05

Pressure hPa : 385 rack travel mm : 12.40 Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 222.50

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed

Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 156.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. :  $\leftarrow 4.00$ 

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.40 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 215.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 850

Injection pump

Pump designation : PES6P120A720RS7135 EP type number : 0 412 726 807

Governor

Governer design. : RQV325...900PA848

: --24K

Governer no.

: 0 421 815 207

Cust. part No. : 313GC5184-P10

Customer-spec. information

Customer : MACK TRUCKS INC.

Motor

: E6-350

Power KW

: 261.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: + 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : + 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

har

: 208.5

Tolerance bar

: +- 1.5

Test lines : 1 680 750 008

013

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Firing order : 1-5-3-6-2

: - 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.85

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 249.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s.

: +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.00 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. :  $\vdash$  5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30 Tolerance mm : + 0.10

Rated speed rpm: : 450

guide sleeve

travel mm : 3.20
Tolerance mm : +- 0.10

Rated speed rpm : 850

guide sleeve

travel mm : 6.00 Tolerance mm : +- 0.10

Rated speed rpm : 1000

guide sleeve

travel mm : 7.60
Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 249.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/10QOS. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 60.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.80
Rated speed rpm : 955.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1090.0
Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.60

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 14.85 Tolerance mm : +- 0.05

Rated speed rpm : 625 rack travel mm : 15.25 Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 15.05 Tolerance mm : + 0.05

Rated speed rpm : 500 rack travel mm : 7.45 Tolerance mm : + 7.45

ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 625
Pressure hPa : 1200
rack travel mm : 15.25
Tolerance mm : +- 0.05

**MEASUREMENT** 

Rated speed rpm : 625

rack travel mm : 8.50
Tolerance mm : + 0.20

Pressure hPa : 310 rack travel mm : 10.25 Tolerance mm : +- 0.05

Pressure hPa : 710
rack travel mm : 13.90
Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 625

Del. quantity

cm3/1000 strokes : 274.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 132.50

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.50 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 150.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolarance

cm3/1000s. : +- 30.00

### LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.00 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.05.90 Edition Test oil : ISO-4113

Combination No. : 0 402 746 851

Injection pump

Pump designation : PES6P120A720RS7135 EP type number : 0 412 726 807

Governor

Governer design. : RQV325...850PA848

: -25K

: 0 421 815 208 Governer no.

Cust. part No. : 313GC5184-P2

Customer-spec. information

Customer : MACK TRUCKS : E6 275 4VH Motor Fower KW : 202.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : + 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80
Tolerance mm : +- 0. Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

: 1-5-3-6-2 Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.95

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 184.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm: 4.50 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 35.00 Tolerance cm3/1000 strokes : + 3.00Check tolerance cm3/1000s. : + 5.00Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.: 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm : + 0.10Tolerance mm : 450 Rated speed rpm guide sleeve : 2.95 travel mm : + 0.15Tolerance mm : 850 Rated speed rpm guide sleeve : 6.30 travel mm : +- 0.10 Tolerance mm Rated speed rpm : 1000 quide sleeve travel mm : 7.80 Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure

hPa : 900 Del. quantity

cm3/1000 strokes : 184.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.60

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 54.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.90
Rated speed rpm : 905.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1035.0
Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1100

LOW IDLE

control lever

position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.5

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : +- 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 12.60 Tolerance mm : + 0.10

Rated speed rpm : 600 rack travel mm : 13.00 Tolerance mm : +- 0.10

Rated speed rpm : 500 rack travel mm : 6.40 Tolerance mm : + 6.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 13.05
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 600

rack travel mm : 10.10
Tolerance mm : +- 0.20

Pressure hPa : 225
rack travel mm : 11.05
Tolerance mm : + 0.05

Pressure hPa : 385
rack travel mm : 12.40
Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 600 Del. quantity

cm3/1000 strokes : 222.50

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 156.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.10 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 215.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.50 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 35.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +-5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

D19

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.05.90 Edition : ISO-4113 Test oil

Combination No. : 0 402 746 852

Injection pump

Pump designation : PES6P120A720RS7157 EP type number : 0 412 726 814

Governor

Governer design. : RQV325...900PA909K

Governer no. : 0 421 815 210

Cust. part No. : 313GC5185-P6

Customer-spec. information

Customer : MACK TRUCKS

Motor : E7-400 Power KW : 298.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h : 165.0 Tolerance l/h : ← 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar  $: \leftarrow 1.0$ 

Prestroke mm : 2.80
Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Firing order : 1- 5- 3- 6- 2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

: +- 0.75 tolerance \*NW

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.85

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 276.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000S. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm: 5.20

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +-3.00

Check tolerance

cm3/1000s. : +-5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

: 1.30 travel mm Tolerance mm : + 0.10

Rated speed rpm : 450

auide sleeve

: 3.00 travel mm : + 0.20Tolerance mm

Rated speed rpm : 650

guide sleeve

: 5.70 travel mm Tolerance mm : + 0.10

Rated speed rpm : 900

guide sleeve

travel mm : 8.40 Tolerance mm : +- 0.10

Rated speed rpm : 1100

guide sleeve

travel mm : 10.55 Tolerance mm : + 0.25

### GUIDE SLEEVE POSITION

control lever

position degree : -1

### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 276.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

### CONTROL LEVER

control lever

position degree : 62.0 tolerance degree : +- 4.0

RATED SPEED

: 14.80 rack travel mm : 945.0 Rated speed rpm Tolerance  $1/\min$ : +- 5.0

rack travel mm : 4.00 Rated speed rpm : 1120.0 Tolerance 1/min : +- 15.0

: 4.00 rack travel mm

rack travel mm : 0.50 : **←** 0.50 Tolerance mm : 1200 Rated speed rpm

# LOW IDLE

control lever

position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 5.2 Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325 rack travel mm : 5.20 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 15.85 Tolerance mm : + 0.05

Rated speed rpm : 625 rack travel mm : 15.30 Tolerance mm : + 0.10

Rated speed rpm : 700
rack travel mm : 15.50
Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 6.75 Tolerance mm : + 6.75

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 15.85
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 900

rack travel mm : 8.70 Tolerance mm : + 0.20

Pressure hPa : 325 rack travel mm : 10.25 Tolerance mm : + 0.05

Pressure hPa : 790
rack travel mm : 14.00
Tolerance mm : + 0.20

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 625

Del. quantity

cm3/1000 strokes : 305.50

Tolerance

cm3/1000 strokes :  $\leftarrow 3.00$ 

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 159.50

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 11.10 Tolerance mm : +- 0.30

Del. quantity

cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.20 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.: 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 853

Injection pumb

Pump designation : PES6P120A720RS7157

EP type number : 0 412 726 814

Governor

Governer design. : RQV325...900PA909

: -1K

: 0 421 815 211 Governer no.

Cust. part No. : 313GC5185-P2

Customer-spec. information

Customer : MACK TRUCKS

Motor : E7-350 : 261.0

Power KW

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : + 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h : 165.0 Tolerance L/h : ← 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : +-0.10

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.65

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 232.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm: 4.80 Tolerance mm: + 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30
Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.00 Tolerance mm : + 0.20

Rated speed rpm : 650

guide sleeve

travel mm : 5.70
Tolerance mm : + 0.10

Rated speed rpm : 900

guide sleeve

travel mm : 8.40
Tolerance mm : + 0.10

Rated speed rpm : 1100

guide sleeve

travel mm : 10.55
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 232.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : + 3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 62.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.60
Rated speed rpm : 945.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1095.0
Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50 Tolerance mm : + 0.50

Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325 rack travel mm : 4.80 Tolerance mm : -- 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 13.65 Tolerance mm : + 0.05

Rated speed rpm : 625 rack travel num : 13.40 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 6.00 Tolerance mm : ← 6.00

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 13.65
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 900

rack travel mm : 8.20 Tolerance mm : + 0.20

Pressure hPa : 325 rack travel mm : 9.45 Tolerance mm : + 0.05

Pressure hPa : 685 rack travel mm : 12.30 Tolerance mm : + 0.20

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 625

Del. quantity

cm3/1000 strokes : 266.00

Tolerance

cm3/1000 strokes :  $\leftarrow 3.00$ 

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400 Del. quantity

cm3/1000 strokes : 155.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.60 Tolerance mm : + 0.30

Del. quantity

cm3/1000 strokes : 190.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +-30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : + 5.00

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

: 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 01.02.90 Edition : ISO-4113 Test oil

Combination No. : 0 402 746 856

Injection pump

Pump designation : PES6P130A320LS7173

EP type number : 0 412 736 802

Governor

Governer design. : RQV300...750PA914 Governer no. : 0 421 813 747

Cust. part No. :

Customer-spec, information Customer : SSCM Motor : UD25-L6

#### TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C Tolerance °C : +- 2.0

: 1 417 413 025 Overflow valve

Inlet press. bar : 1.50

Test nozzle holde

: 0 681 443 022 assembly

Opening pressure

: 173.5 har : +- 1.5 Tolerance bar

: 1 680 750 060 Test lines

Outside diameter : 8.00

x inside diameter: 4.00 x length mm : 1000 REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1- 4- 2- 6- 3

: - 5

: 0-60-120-180-240 Phasing

: -300

: + 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

: 750 Rated speed rpm

Rack travel in mm : 12.35 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 481.50

Tolerance

cm3/1000 strokes : +- 1.50

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 10.0

Rated speed rpm : 300.0

Rack travel in mm : 5.00

Tolerance mm : +0.30

Del. quantity

cm3/1000 strokes : 50.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 7.00

Spreed

Tolerance

cm3/1000 strokes : 10.0

Check tolerance

cm3/1000s. : 14.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300

quide sleeve

travel mm : 1.30 Tolerance mm : +- 0.20

Rated speed rpm : 600

auide sleeve

travel mm : 5.40

Tolerance mm :  $\leftarrow 0.30$ 

Rated speed rpm : 750

guide sleeve

travel mm : 7.80

Tolerance mm : +-0.10

Rated speed rpm : 1000

guide sleeve

travel mm : 11.50

Tolerance mm :  $\div$  0.50

GUIDE SLEEVE POSITION

control lever

position degree : -1

Rated speed rpm : 800

Rack travel in mm : 16.50

Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Del. quantity

cm3/1000 strokes : 481.50

Tolerance

cm3/1000 strokes : + 1.50

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 10.0

CONTROL LEVER

control lever

position degree : 122.0 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 16.5 Rated speed rpm : 800

rack travel mm : 11.30 Rated speed rpm : 795.0

Tolerance 1/min : +- 5.0

rack travel mm : 4.00 Rated speed rpm : 855.0

Tolerance 1/min : +- 15.0

rack travel mm : 4.00

LOW IDLE

control lever

position degree : 65.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 300 rack travel mm : 5.0

Rated speed rpm : 100

CRT mm min. : 6.50

Testing:

Rated speed rpm : 300 rack travel mm : 5.00 Tolerance mm : +- 0.30

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 750 rack travel mm : 12.35 Tolerance mm : + 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300.0

Rack travel in mm : 5.00 Tolerance mm : + 0.30

Del. quantity

cm3/1000 strokes : 50.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. :  $\leftarrow 7.00$ 

Spreed Tolerance

cm3/1000 strokes : 10.0

Check tolerance

cm3/1000s. : 14.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.05.90 Edition : ISO-4113 Test oil

Combination No. : 0 402 746 861

Injection pump

Pump designation : PES6P120A720RS7183 EP type number : 0 412 726 825

Governor

Governer design. : RQV325...875PA848

: -26K

: 0 421 815 212 Governer no.

Cust. part No. : 313GC5174-P6

Customer-spec. information

Customer : MACK TRUCKS Motor : EM 6-300L

Power KW : 183.0

TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C : +- 2.0 Tolerance °C

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

: 165.0 min. L/h : **←** 5.0 Tolerance l/h

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008 Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 7.00 Tolerance mm : + 1.00

Firing order : 1-5-3-6-2

: - 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.25 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 210.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance cm3/1000s.: +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 : 325.0 Rated speed rpm Rack travel in mm : 4.80 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 44.00 Tolerance cm3/1000 strokes : +- 3.00 Check tolerance cm3/1000S. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.: 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL : 325 Rated speed rpm guide sleeve : 1.30 travel mm : + 0.10Tolerance mm : 450 Rated speed rpm auide sleeve : 2.65 travel mm : + 0.15Tolerance mm Rated speed rpm : 600 auide sleeve travel mm : 4.20 : +- 0.10 Tolerance mm Rated speed rpm : 875 guide sleeve : 7.00 travel mm : + 0.10Tolerance mm Rated speed rpm : 1000

: 8.40

Tolerance mm : +-0.20GUIDE SLEEVE POSITION control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 875 Aneroid pressure : 1500 hPa Del. quantity cm3/1000 strokes : 210.00 Tolerance cm3/1000 strokes : + 1.00Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 59.0 tolerance degree : +- 4.0 RATED SPEED : 10.20 rack travel mm Rated speed rpm : 920.0 Tolerance 1/min : +- 5.0 rack travel mm : 4.00 : 1015.0 Rated speed rpm Tolerance 1/min : +- 15.0 rack travel mm : 4.00 rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1150 LOW IDLE control lever

position degree : 14.0

tolerance degree : +- 4.0

guide sleeve

travel mm

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325 : 4.80 rack travel mm : + 0.10Tolerance mm

rack travel mm : 2.00

TORQUE CONTROL

: 875 Rated speed rpm : 11.25 rack travel mm : +- 0.05 Tolerance mm

: 510 Rated speed rpm rack travel mm : 16.70 : + 0.10Tolerance mm

: 700 Rated speed rpm : 13.30 rack travel mm : + 0.10Tolerance mm

Rated speed rpm : 600 : 15.40 rack travel mm : + - 0.20Tolerance mm

Rated speed rpm : 420 rack travel mm : 8.30 : +- 8.30 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

: 510 Rated speed rpm : 1500 Pressure hPa : 16.70 rack travel mm Tolerance mm : +- 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 8.90 Tolerance mm : **←** 0.20

: 435 Pressure hPa

rack travel mm : 10.90 Tolerance mm : +- 0.10

: 795 Pressure hPa rack travel mm : 14.80 Tolerance mm : +-0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 1500 hPa : 510 Rated speed rom

Del. quantity

cm3/1000 strokes : 311.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : + 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s.: 12.

: 400 Rated speed rpm

Del. quantity

cm3/1000 strokes : 156.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.90 Tolerance mm : + 0.20

Del. quantity cm3/1000 strokes : 160.00

Tolerance

LOW IDLE

cm3/1000 strokes :  $\leftarrow$  10.00

Check tolerance

: +- 15.00 cm3/1000s.

Rated speed rpm : 325.0

Rack travel in mm: 4.80 Tolerance mm :  $\leftarrow$  0.10

Del. quantity cm3/1000 strokes : 44.00

Tolerance

cm3/1000 strokes : +-3.00

Check tolerance cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90 Test oil : ISO-4113

Combination No. : 0 402 746 862

Injection pump

Pump designation : PES6P120A720RS7183

EP type number : 0 412 726 825

Governor

Governer design. : RQV325...875PA878

: -11K

Governer no. : 0 421 815 213

Cust. part No. : 313GC5174-P8

Customer-spec. information

Customer : MACK TRUCKS
Motor : EM 6-300L

Power KW : 183.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : + 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 7.00 Tolerance mm : +- 1.00

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow 0.50$ 

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.25
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 210.00

Tolerance

cm3/1000 strokes : + 1.00

E08

Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 : 325.0 Rated speed rpm Rack travel in mm : 4.70 : + - 0.10Tolerance mm Del. quantity cm3/1000 strokes : 44.00 Tolerance cm3/1000 strokes : + 3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL : 325 Rated speed rpm guide sleeve travel mm : 1.30 : + 0.10Tolerance mm : 450 Rated speed rpm guide sleeve : 2.65 travel mm : + 0.15Tolerance mm Rated speed rpm : 600 guide sleeve : 4.20 travel mm : + 0.10Tolerance mm : 875 Rated speed rpm auide sleeve travel mm : 7.40 : + - 0.10Tolerance mm Rated speed rpm : 1000 guide sleeve

: 8.85

Tolerance mm : +-0.15GUIDE SLEEVE POSITION control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 875 Aneroid pressure hPa : 1500 Del. quantity cm3/1000 strokes : 210.00 Tolerance cm3/1000 strokes : + 1.00Check tolerance cm3/1000s.: +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 59.0 tolerance degree : +- 4.0 RATED SPEED : 10.20 rack travel mm Rated speed rpm : 920.0 Tolerance  $1/\min$ : + 5.0 rack travel mm : 4.00 Rated speed rpm : 1015.0 Tolerance 1/min : + 15.0 rack travel mm : 4.00 : 0.50 rack travel mm : +- 0.50 Tolerance mm Rated speed rpm : 1150 LOW IDLE control lever

position degree

tolerance degree : + 4.0

: 14.0

travel mm

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325 rack travel mm : 4.70 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875 rack travel mm : 11.25 Tolerance mm : + 0.05

Rated speed rpm : 510 rack travel mm : 16.70 Tolerance mm : + 0.10

Rated speed rpm : 700 rack travel mm : 13.40 Tolerance mm : + 0.10

Rated speed rpm : 600 rack travel mm : 15.60 Tolerance mm : + 0.10

Rated speed rpm : 450 rack travel mm : 8.30 Tolerance mm : + 8.30

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1500
rack travel mm : 16.70
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 8.90
Tolerance mm : + 0.20

Pressure hPa : 435

rack travel mm : 10.90 Tolerance mm : +- 0.10

Pressure hPa : 795
rack travel mm : 14.80
Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 311.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. :  $\leftarrow$  6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 156.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 8.90 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 185.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

uneck toterance

cm3/1000s. :  $\leftarrow 25.00$ 

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.70 Tolerance mm : +- 0.10

Del. quantity cm3/1000 strokes : 44.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 02.05.90 Test oil : ISO-4113

Combination No. : 0 402 746 866

Injection pump

Pump designation : PES6P120A720RS7157

EP type number : 0 412 726 814

Governor

Governer design. : RQV325...875PA909

: -2K

Governer no. : 0 421 815 217

Cust. part No. : 313GC5185-P10

Customer-spec. information

Customer : MACK TRUCKS Motor : EM7-300L

Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. l/h : 165.0 Tolerance l/h : + 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00

x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow 0.50$ 

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.65
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 212.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : + 3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

: 325.0 Rated speed rpm

Rack travel in mm : 4.90

: + 0.10Tolerance mm

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s.: +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

: 1.30 travel mm : + 0.10Tolerance mm

: 450 Rated speed rpm

guide sleeve

: 3.00 travel mm : + 0.20

: 650

: 1100

Tolerance mm

Rated speed rpm

quide sleeve

: 5.70 travel mm : +- 0.10 Tolerance mm

Rated speed rpm : 900

guide sleeve

: 8.40 travel mm

: + 0.10Tolerance mm

Rated speed rpm

guide sleeve

: 10.55 travel mm : +- 0.25 Tolerance mm

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure

: 1200

Del. quantity

cm3/1000 strokes : 212.00 Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : + 3.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

: 61.0 position degree

tolerance degree : +- 4.0

RATED SPEED

: 11.60 rack travel mm Rated speed rpm : 920.0

Tolerance 1/min : +- 5.0

: 4.00 rack travel mm

: 1065.0 Rated speed rpm

Tolerance 1/min : +- 15.0

: 4.00 rack travel mm

rack travel mm : 0.50

: +- 0.50 Tolerance mm

: 1200 Rated speed rpm

LOW IDLE

control lever

position degree

: 11.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.9 :

Rated speed rpm : 275

CRT mm min. : 6.00

Testing:

Rated speed rpm : 325 rack travel mm : 4.90 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875 rack travel mm : 12.65 Tolerance mm : + 0.05

Rated speed rpm : 510 rack travel mm : 13.70 Tolerance mm : + 0.10

Rated speed rpm : 400 rack travel mm : 6.50 Tolerance mm : + 6.50

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.65
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 8.30
Tolerance mm : +- 0.20

Pressure hPa : 370 rack travel mm : 9.55 Tolerance mm : + 0.05

Pressure hPa : 740
rack travel mm : 12.50
Tolerance mm : +- 0.20

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 294.50

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 159.50

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.70 Tolerance mm : + 0.30

Del. quantity

cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +-30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.90
Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance cm3/1000s. : **←** 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.03.90 Test oil : ISO-4113

Combination No. : 0 402 746 867

Injection pump

Pump designation : PES6P12DA72DRS7164 EP type number : 0 412 726 816

Governor

Governer design. : RQV325...900PA848

: -27K

Governer no. : 0 421 815 218

Cust. part No. : 313GC5181P10

Customer-spec. information

Customer : MACK TRUCKS Motor : EC6-350 4VH

Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : + 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm : 12.50 Tolerance mm : + 0.50

Firing order : 1- 5- 3- 6- 2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow 0.75$ 

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 16.05

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 256.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance : +- 4.00 cm3/1000s.Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm : 4.40 : + 0.10Tolerance infi Del. quantity cm3/1000 strokes : 42.00 Tolerance cm3/1000 strokes : +- 3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm : + 0.10 Tolerance mm : 450 Rated speed rpm guide sleeve : 3.20 travel mm : +- 0.20 Tolerance mm : 850 Rated speed rpm auide sleeve : 6.00 travel mm : +- 0.10 Tolerance mm : 1000 Rated speed rpm auide sleeve : 7.60 travel mm : + 0.20Tolerance mm

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm3/1000 strokes : 256.00

cm3/1000 strokes : 256.00
Tolerance
cm3/1000 strokes : +- 1.00
Check tolerance

cm3/1000s. : + 4.00 Spreed

Tolerance cm3/1000 strokes : 5.0 Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever position degree : 59.0 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 15.00
Rated speed rpm : 955.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1120.0
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50Tolerance mm :  $\leftarrow 0.50$ Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 14.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.4

GUIDE SLEEVE POSITION

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325 rack travel mm : 4.40 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 16.05
Tolerance mm : + 0.05

Rated speed rpm : 625 rack travel mm : 16.60 Tolerance mm : + 0.10

Rated speed rpm : 550 rack travel mm : 8.20 Tolerance mm : + 8.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 1200
rack travel mm : 16.60
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 625

rack travel mm : 9.60 Tolerance mm : ← 0.20

Pressure hPa : 265
rack travel mm : 11.35
Tolerance mm : + 0.05

Pressure hPa : 665 rack travel mm : 14.90 Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 625

Del. quantity

cm3/1000 strokes : 283.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 143.50

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. :  $\leftarrow 4.00$ 

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.60 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 155.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. : +-30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.40
Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02,05,90 : ISO-4113 Test oil

Combination No. : 0 402 746 868

Injection pump

Pump designation : PES6P120A720RS7164 : 0 412 726 816 EP type number

Governor

Governer design. : RQV325...875PA848

: -28K

: 0 421 815 219 Governer no.

Cust. part No. : 313GC5181P6

Customer-spec. information

Customer : MACK TRUCKS : EM6-275L 4VH Motor

Power KW : 205.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C Tolerance °C : +- 2.0

: 2 417 413 011 Overflow valve

Inlet press. bar : 1.50

Overflow quantity

min. L/h : 165.0 : +- 5.0 Tolerance L/h

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

: 1 680 750 008 Test lines

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +1.0

Prestroke mm : 2.80 : +- 0.05 Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm : 12.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2

Phasing : 0-60-120-180-240

: -300

: + 0.50Tolerance

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm: 13.65 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 194.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance : + 3.00cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 : 325.0 Rated speed rpm Rack travel in mm: 4.90 Tolerance mm : + 0.20Del. quantity cm3/1000 strokes : 42.00 Tolerance cm3/1000 strokes : +3.00Check tolerance cm3/1000s. : + 5.00Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.: 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL : 325 Rated speed rpm guide sleeve : 1.30 travel mm : + 0.10Tolerance mm Rated speed rpm : 450 guide sleeve : 2.95 travel mm : + 0.15Tolerance mm Rated speed rpm : 850 guide sleeve : 6.30 travel mm : +- 0.10Tolerance mm : 1000 Rated speed rpm guide sleeve travel mm : 7.80 : + 0.10Tolerance mm

control lever position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

: 875 Rated speed rpm Aneroid pressure

: 1200

Del. quantity

cm3/1000 strokes : 194.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : + 3.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

: 61.0 position degree tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.60 Rated speed rpm : 920.0 Tolerance  $1/\min$ : +5.0

rack travel mm : 4.00 Rated speed rpm : 1060.0 Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50 : +- 0.50 Tolerance mm Rated speed rpm : 1150

LOW IDLE

control lever

position degree : 14.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm rack travel mm : 4.9

GUIDE SLEEVE POSITION

Rated speed rpm : 275

CRT mm min. : 6.20

Testing:

Rated speed rpm : 325 rack travel mm : 4.90 Tolerance mm : + 0.20

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875 rack travel mm : 13.65 Tolerance mm : + 0.05

Rated speed rpm : 510
rack travel mm : 15.50
Tolerance mm : + 0.10

Rated speed rpm : 750
rack travel mm : 14.05
Tolerance mm : + 0.15

Rated speed rpm : 600 rack travel mm : 15.20 Tolerance mm : + 0.10

Rated speed rpm : 420 rack travel mm : 7.60 Tolerance mm : +- 7.60

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 15.50
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 510

rack travel mm : 10.90 Tolerance mm : +- 0.20

Pressure hPa : 265 rack travel mm : 12.15 Tolerance mm : + 0.05

Pressure hPa : 450 rack travel mm : 14.40

Tolerance mm : +-0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 264.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 154.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.90 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 205.00

Tolerance

 $cm3/1000 \text{ strokes} : \leftarrow 20.00$ 

Check tolerance

cm3/1000s. :  $\leftarrow 30.00$ 

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.90 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s : +- 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s.

: 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.05.90 Edition Test oil : ISO-4113

Combination No. : 0 402 746 868AA

Injection pump

Pump designation : PES6P120A720RS7164 EP type number : 0 412 726 816

Governor

Governer design. :

Governer no. : 0 421 815 ...

Cust. part No. : 313GC...

Customer-spec. information

Customer : MACK TRUCKS
Motor : EM6-275L 4VH

Power KW : 205.0

TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

min. l/h : 165.0 Tolerance l/h : + 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.50 Tolerance mm :  $\leftarrow 0.50$ 

Firing order : 1-5-3-6-2 : - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

: +- 0.75 tolerance "NW

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm: 13.65 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 197.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance cm3/1000s. : +- 3.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance : 9.0 cm3/1000s. Rated speed rpm : 325.0 Rack travel in mm: 4.90 : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 42.00 Tolerance cm3/1000 strokes : +- 3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 auide sleeve travel mm : 1.25 Tolerance mm : + 0.15Rated speed rom : 450 auide sleeve travel mm : 2.05 : + 0.15Tolerance mm Rated speed rom : 850 quide sleeve

: 6.50 travel mm : + 0.20Tolerance mm : 1000 Rated speed rpm guide sleeve : 9.70 travel mm Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875 Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 197.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 62.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.20 Rated speed rpm : 920.0 Tolerance  $1/\min$ : +-5.0

: 4.00 rack travel mm Rated speed rpm : 975.0 Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1050

LOW IDLE

control lever

position degree : 14.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325 rack travel mm : 4.90 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 13.65
Tolerance mm : +- 0.05

Rated speed rpm : 510 rack travel mm : 15.30 Tolerance mm : +- 0.10

Rated speed rpm : 750 rack travel mm : 14.05 Tolerance mm : +- 0.15

Rated speed rpm : 420 rack travel mm : 7.60 Tolerance mm : + 7.60

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510

Pressure hPa : 1200

rack travel mm : 15.30

Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 10.90 Tolerance mm : +- 0.20

Pressure hPa : 265 rack travel mm : 12.15 Tolerance mm : +- 0.05

Pressure hPa : 450 rack travel mm : 14.20 Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 262.50

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 154.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +-4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.90 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 205.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.90 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 02.05.90 : ISO-4113 Test oil

Combination No. : 0 402 746 869

Injection pump

Pump designation : PES6P120A720RS7164

EP type number : 0 412 726 816

Governor

Governer design. : RQV325...875PA848

: -29K

: 0 421 815 220 Governer no.

Cust. part No. : 313GC5181P4

Customer-spec. information

Customer : MACK TRUCKS : EMC6 250L 4VH Motor

Power KW : 196.0

TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C Tolerance \*C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

: 165.0 min. L/h Tolerance L/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

: 1 680 750 008 Test lines

Outside diameter : 6.00

x inside diameter : 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : +-0.10

Rack travel in mm: 12.50 Tolerance mm : + 0.50

: 1-5- 3- 6- 2 Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 13.05 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 185.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance cm3/1000s. : +- 3.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm : 4.80 Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 42.00 Tolerance cm3/1000 strokes : + 3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.30 travel mm : +- 0.10 Tolerance mm Rated speed rpm : 450 guide sleeve travel mm : 3.00 : + 0.20Tolerance mm : 850 Rated speed rpm guide sleeve : 6.30 travel mm : +- 0.10 Tolerance mm : 1000 Rated speed rpm guide sleeve : 7.80 travel mm : + -0.10Tolerance mm

control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 875 Aneroid pressure hPa : 900 Del. quantity cm3/1000 strokes : 185.00 Tolerance cm3/1000 strokes : +- 1.00Check tolerance cm3/1000s. : +- 3.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 59.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 12.00 Rated speed rpm : 920.0 Tolerance 1/min : +- 5.0 rack travel mm : 4.00 Rated speed rpm : 1050.0 Tolerance  $1/\min$ :  $\leftarrow$  15.0 rack travel mm : 4.00 rack travel mm : 0.50 : +- 0.50 Tolerance mm Rated speed rpm : 1150 LOW IDLE control lever

position degree : 14.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

GUIDE SLEEVE POSITION

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325 rack travel mm : 4.80 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 23.05
Tolerance mm : ÷ 0.05

Rated speed rpm : 510 rack travel mm : 15.00 Tolerance mm : + 0.10

Rated speed rpm : 650 rack travel mm : 14.05 Tolerance mm : + 0.15

Rated speed rpm : 450 rack travel mm : 7.35 Tolerance mm : ÷ 7.35

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 510
Pressure hPa : 900
rack travel mm : 15.00
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 510

rack travel mm : 10.60
Tolerance mm : +- 0.20

Pressure hPa : 205 rack travel mm : 11.75 Tolerance mm : + 0.05

Pressure hPa : 460 rack travel mm : 14.10 Tolerance mm : + 0.20

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 255.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 154.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.60 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 180.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.00

Check tolerance

cm3/1000s. : +- 30.00

# LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes :  $\leftarrow 3.00$ 

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.05.90 Test oil : 180-4113

Combination No. : 0 402 746 870

Injection pump

Pump designation : PES6P120A720RS7157 EP type number : 0 412 726 814

Governor

Governer design. : RQV325...875PA878

: -14K

Governer no. : 0 421 815 222

Cust. part No. : 313GC5179-P28

Customer-spec. information

Customer : MACK

Motor : EM7-250L 4VH

Power KW : 187.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

**DEGINNING OF DELIVERY** 

Test pressure bar : 18.0
Tolerance bar : +- 1.0

Prestroke mm : 2.80Tolerance mm : +0.05

Check

tolerance mm : +- 0.10

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow 0.50$ 

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 10.45
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 175.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s : +- 4.00

Spreed

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +-3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.45
Tolerance mm : + 0.15

Rated speed rpm : 500

guide sleeve

travel mm : 3.70
Tolerance mm : + 0.30

Rated speed rpm : 900

guide sleeve

travel mm : 6.80
Tolerance mm : + 0.10

Rated speed rpm : 1075

guide sleeve

travel mm : 8.65 Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure

hPa : 900

Del. quantity

cm3/1000 strokes : 175.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 58.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.40
Rated speed rpm : 920.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00 Rated speed rpm : 1035.0 Tolerance 1/min : +- 15.0

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 16.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325 rack travel mm : 4.80 Tolerance mm : +- 0.10

rack travel mm : 2.00

TORQUE CONTROL

: 875 Rated speed rpm : 10.45 rack travel mm Tolerance mm : +- 0.05

: 510 Rated speed rpm : 12.00 rack travel mm Tolerance mm : + 0.10

: 450 Rated speed rpm rack travel mm : 5.90 : +- 5.90 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

: 510 Rated speed rpm Pressure hPa : 900 : 12.00 rack travel mm Tolerance mm : + - 0.10

MEASUREMENT

Rated speed rpm : 510

rack travel mm : 8.00 Tolerance mm : +- 0.20

Pressure hPa : 235 rack travel mm : 8.85 Tolerance mm : +- 0.05

Pressure hPa : 485 : 11.00 rack travel mm : + - 0.20Tolerance mm

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 900 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 247.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 153.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.20 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 190.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : **+-** 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.05.90 Test oil : ISO-4113

Combination No. : 0 402 746 871

Injection pump

Pump designation : PES6P120A720RS7157

EP type number : 0 412 726 814

Governor

Governer design. : RQV325...900PA929K

Governer no. : 0 421 815 223

Cust. part No. : 313GC5185-P8

Customer-spec. information

Customer : MACK TRUCKS

Motor : E7-400 Power KW : 298.0

## TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C Tolerance °C : -- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

: 165.0 min. L/h Tolerance l/h: +5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar : 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Firing order : 1-5-3-6-2

: - 4

: 0-60-120-180-240 Phasing

: -300 : + 0.50Tolerance

Check

tolerance "NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.85 Tolerance mm : +-0.05

Del. quantity

cm3/1000 strokes : 276.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

: +- 4.00 cm3/1000s.

Spreed

Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm: 5.20 : +- 0.10Tolerance mm Del. quantity cm3/1000 strokes : 43.00 Tolerance cm3/1000 strokes : - 3.00 Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.: 12.0 (B) SETTING OF INJECTION PUMP

# (B) SETTING OF INJECTION PUMP WITH GOVERNOR

## GUIDE SLEEVE TRAVEL

Rated speed rpm : 325 guide sleeve

travel mm : 1.30 Tolerance mm : +- 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.00 Tolerance mm : +- 0.20

Rated speed rpm : 650

guide sleeve

travel mm : 5.70
Tolerance mm : +- 0.10

Rated speed rpm : 900 guide sleeve

travel mm : 8.40
Tolerance mm : +- 0.10

Rated speed rpm : 1100

guide sleeve

travel mm : 10.55
Tolerance mm : +- 0.25

## GUIDE SLEEVE POSITION

control lever position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 276.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. :  $\leftarrow 4.00$ 

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

## CONTROL LEVER

control lever

position degree : 62.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.80
Rated speed rpm : 945.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1120.0
Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

## LOW IDLE

control lever

position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 5.2

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325 rack travel mm : 5.20 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 15.85 Tolerance mm : + 0.05

Rated speed rpm : 625 rack travel mm : 15.30 Tolerance mm : +- 0.10

Rated speed rpm : 700
rack travel mm : 15.50
Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 6.75 Tolerance mm : + 6.75

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 15.85
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 900

rack travel mm : 8.70
Tolerance mm : + 0.20

Pressure hPa : 325 rack travel mm : 10.25 Tolerance mm : + 0.05

Pressure hPa : 790
rack travel mm : 14.00
Tolerance mm : + 0.20

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 625

Del. quantity

cm3/1000 strokes : 305.50

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strckes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 159.50

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 11.10 Tolerance mm : +- 0.30

Del. quantity

cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +-30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.20
Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

cm3/1000 strokes : +- 3.00

Check tolerance cm3/1000s. : +- 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 872

Injection pump

Pump designation : PES6P120A720RS7157

EP type number : 0 412 726 814

Governor

Governer design. : RQV325...900PA929

: -1K

Governer no.

: 0 421 815 224

Cust. part No. : 313GC5185-P4

Customer-spec. information

Customer : MACK TRUCKS

Motor

: E7-350

Power KW

: 261.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h

: 165.0

Tolerance l/h

: +- 5.0

Test nozzle holde

: 1 688 901 101

assembly

Opening pressure

: 208.5

Tolerance bar

: +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm

Firing order : 1-5-3-6-2

: +- 0.10

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance \*NW

: +- 0.75

Start of delivery mark

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 900

Rack travel in mm: 13.65

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 232.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s.

: +- 3.00

Spreed

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

quide sleeve

travel mm : 1.30 Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.00 Tolerance mm : + 0.20

Rated speed rpm : 650

guide sleeve

travel mm : 5.70
Tolerance mm : + 0.10

Rated speed rpm : 900

guide sleeve

travel mm : 8.40 Tolerance mm : + 0.10

Rated speed rpm : 1100

guide sleeve

travel mm : 10.55
Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 232.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +-3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 62.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.60
Rated speed rpm : 945.0

Tolerance  $1/\min$  : +-5.0

rack travel mm : 4.00 Rated speed rpm : 1095.0

Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : +- 0.50

Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 11.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325 rack travel mm : 4.80
Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 13.65 Tolerance mm : +- 0.05

Rated speed rpm : 625 rack travel mm : 13.40 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 6.00 : +- 6.00 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 900 Pressure hPa : 1200 rack travel mm : 13.65
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 900

rack travel mm : 8.20 Tolerance mm : +- 0.20

: 325 Pressure hPa rack travel mm : 9.45 : +- 0.05 Tolerance mm

Pressure hPa : 685 rack travel mm : 12.30 : +- 0.20 Tolerance mm

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 1200 hPa Rated speed rpm : 625

Del. quantity cm3/1000 strokes : 266.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 155.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.60 : +- 0.30 Tolerance mm

Del. quantity

cm3/1000 strokes : 190.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm: 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

: 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.05.90 Test oil : ISO-4113

Combination No. : 0 402 746 873

Injection pump

Pump designation : PES6P12OA72GRS7157 EP type number : 0 412 726 814

Governor

Governer design. : RQV325...875PA929

: -2K

Governer no. : 0 421 815 225

Cust. part No. : 313GC5185-P12

Customer-spec. information

Customer : MACK TRUCKS
Motor : EM7-300L
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : + 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. l/h : 165.0 Tolerance l/h : + 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +-0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.65
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 212.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance cm3/1000s. : +- 3.00

Spreed

Tolerance cm3/1000 strokes : 5.0

Check tolerance cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.90 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. :  $\leftarrow 5.00$ 

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30 Tolerance mm : +- 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.00 Tolerance mm : +- 0.20

Rated speed rpm : 650

guide sleeve

travel mm : 5.70
Tolerance mm : + 0.10

Rated speed rpm : 900

guide sleeve

travel mm : 8.40
Tolerance mm : +- 0.10

Rated speed rpm : 1100

guide sleeve

travel mm : 10.55
Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 212.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 61.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 920.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1065.0
Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 11.0 tolerance degree : +- 4.0

# Setting point w/out bumper spring

Rated speed rpm : 325 : 4.9 rack travel mm

: 275 Rated speed rpm

CRT mm min. : 6.00

## Testing:

: 325 Rated speed rpm rack travel mm : 4.90 Tolerance mm : +- 0.10

rack travel nm : 2.00

## TORQUE CONTROL

Rated speed : 12.05
rack travel mm : 12.05
: + 0.05 Rated speed rpm : 875

: 510 Rated speed rpm rack travel mm : 13.70 : + 0.10 Tolerance mm

: 400 Rated speed rpm rack travel mm : 6.50 : +- 6.50 Tolerance mm

## ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 510 Pressure hPa : 1200 rack travel mm : 13.70 Tolerance mm : + 0.10

## **MEASUREMENT**

: 510 Rated speed rpm

: 8.30 rack travel mm : + 0.20Tolerance mm

: 370 Pressure hPa rack travel mm : 9.55 Tolerance mm : ← 0.05

: 740 Pressure hPa rack travel mm : 12.50 : +- 0.20 Tolerance mm

# Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 1200 Rated speed rpm : 510

Del. quantity cm3/1000 strokes : 294.50

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 159.50

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s.: +- 4.00

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.70 Tolerance mm : +- 0.30

Del. quantity cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

: + 30.00 cm3/1000s.

# LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.90 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

cm3/1000 strokes : +- 3.00

Check tolerance cm3/1000s. : +- 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 02.05.90 Edition Test oil : ISO-4113

Combination No. : 0 402 746 874

Injection pump

Pump designation : PES6P120A720RS7157 EP type number : 0 412 726 814

Governor

Governer design. : RQV325...850PA909

: -3K

: 0 421 815 230 Governer no.

Cust. part No. : 313GC5185-P14

Customer-spec. information

Customer : MACK TRUCKS : E7-300

Motor Power KW : 220.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h : 165.0 Tolerance L/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05 Check

tolerance mm : + 0.10

Firing order : 1-5-3-6-2 : - 4

Phasing : 0-60-120-180-240

: -300

: + 0.50Tolerance

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.25 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 205.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm: 4.80 Tolerance mm: : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30 Tolerance mm : +- 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.00 Tolerance mm : +- 0.20

Rated speed rpm : 650

guide sleeve

travel mm : 5.70 Tolerance mm : +- 0.10

Rated speed rpm : 900

guide sleeve

travel mm : 8.40 Tolerance mm : +- 0.10

Rated speed rpm : 1100

guide sleeve

travel mm : 10.55 Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 205.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 55.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 895.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00 Rated speed rpm : 1045.0 Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

LOW IDLE

control lever

position degree : 9.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325 rack travel mm : 4.80

Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850 rack travel mm : 12.25 Tolerance mm : + 0.05

Rated speed rpm : 600 rack travel mm : 12.50 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 5.55 Tolerance mm : +- 5.55

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 12.50
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 600

rack travel mm : 7.90 Tolerance mm : + 0.20

Pressure hPa : 265 rack travel mm : 9.05 Tolerance mm : + 0.05

Pressure hPa : 565 rack travel mm : 11.40 Tolerance mm : + 0.20

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 244.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. :  $\leftarrow 5.00$ 

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 150.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +-4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.30
Tolerance mm : + 0.30

Del. quantity

cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. :  $\leftarrow 30.00$ 

**LOW IDLE** 

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000S. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02,05,90 : ISO-4113

Combination No. : 0 402 746 875

Injection pump

Pump designation : PES6P120A720RS7157

EP type number : 0 412 726 814

Governor

Governer design. : RQV325...975PA909

: -4%

Governer no.

: 0 421 815 231

Cust. part No. : 313GC5185-P18

Customer-spec. information

Customer : MACK TRUCKS

Motor

: E7-300A

Power KW

: 224.0

TEST BENCH REQUIREMENTS

Test oil inlet

temo. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h

: 165.0

Tolerance l/h

: +- 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test Lines

: 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : + 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.

Tolerance mm

: +- 0.05

Check

tolerance mm : ← 0.10

Firing order : 1-5-3-6-2

Phasing

: 0-60-120-180-240

: -300

Tolerance

: + 0.50

Check

tolerance \*NW

: +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.35

Tolerance mm : +-0.05

Del. quantity

cm3/1000 strokes : 202.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s.

: +- 3.00

Spreed

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : + 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275

guide sleeve

travel mm : 0.75
Tolerance mm : + 0.25

Rated speed rpm : 325

guide sleeve

travel mm : 1.60 Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.10
Tolerance mm : +- 0.20

Rated speed rpm : 1000

guide sleeve

travel mm : 8.50 Tolerance mm : + 0.10

Rated speed rpm : 1200

guide sleeve

travel mm : 10.40
Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 202.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm:3/100Cs. : 9.0

CONTROL LEVER

control lever

position degree : 58.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.30 Rated speed rpm : 1020.0

Tolerance 1/min : + 5.0

rack travel mm : 4.00

Rated speed rpm : 1160.0 Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : +- 0.50 Rated speed rpm : 1250

LOW IDLE

control lever

position degree : 12.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

7.5

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325 rack travel mm : 4.80 Tolerance mm : +- 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 975 rack travel mm : 12.35 Tolerance mm : +- 0.05

Rated speed rpm : 600 rack travel mm : 11.80 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 5.75 Tolerance mm : + 5.75

ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : + 0.05

MEASUREMENT

Rated speed rpm : 975

rack travel mm : 7.90
Tolerance mm : +- 0.20

Pressure hPa : 235 rack travel mm : 9.05 Tolerance mm : + 0.05

Pressure hPa : 460 rack travel mm : 11.00 Tolerance mm : + 0.20

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 224.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 148.00

Tolerance

cm3/1000 strokes :  $\leftarrow 2.00$ 

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.30 Tolerance mm : + 0.30

Del. quantity

cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 876

Injection pump

Pump designation : PES6P120A72URS7157

EP type number

: 0 412 726 814

Governor

Governer design. : RQV325...850PA929

: -3K

Governer no.

: 0 421 815 232

Cust. part No. : 313GC5185-P16

Customer-spec. information

Customer : MACK TRUCKS

Motor

: E7-300 4VH

Power KW

: 220.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h

: 165.0

Tolerance 1/h

: +- 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0

Tolerance bar : +- 1.0

: 2.80 Prestroke mm Tolerance mm : **←** 0.05

Check

: +- 0.10 tolerance mm

Firing order : 1-5-3-6-2

: - 4

: 0-60-120-180-240 Phasing

: -300

Tolerance

: + 0.50

Check

tolerance 'NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.25

Tolerance mm

: <del>--</del> 0.05

Del. quantity

cm3/1000 strokes : 205.00

Tolerance

cm3/1000 strokes : +-1.00

Check tolerance

cm3/1000s.

: <del>+-</del> 3.00

Spreed

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s.

: 9.0

Rated speed rpm : 325.0

Rack travel in mm: 4.80 Toterance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : + 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

: 325 Rated speed rpm

auide sleeve

travel mm : 1.30 Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.00 : +- 0.20 Tolerance mm

Rated speed rpm : 650

guide sleeve

: 5.70 travel mm : + 0.10Tolerance mm

Rated speed rpm : 900

guide sleeve

: 8,40 travel mm : + 0.10Tolerance mm

Rated speed rpm

: 1100

guide sleeve

travel mm : 10.55 : + 0.25Tolerance mm

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure

: 1200 hPa

Del. quantity

cm3/1000 strokes : 205.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : + 3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 55.0 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.20 Rated speed rpm : 895.0 Tolerance  $1/\min$ : + 5.0

rack travel mm : 4.00 Rated speed rpm : 1055.0

Tolerance 1/min : **←** 15.0

rack travel mm : 4.00

rack travel mm : 0.50 : **←** 0.50 Tolerance mm

Rated speed rpm : 1150

LOW IDLE

control lever

position degree : 11.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325 rack travel rmm : 4.80

Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850 rack travel mm : 12.25 Tolerance mm : + 0.05

Rated speed rpm : 600 rack travel mm : 12.60 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 5.55 Tolerance mm : + 5.55

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 12.60
Tolerance mm : +- 0.10

**MEASUREMENT** 

Rated speed rpm : 600

rack travel mm : 7.90
Tolerance mm : +- 0.20

Pressure hPa : 265
rack travel mm : 9.05
Tolerance mm : + 0.05

Pressure hPa : 565 rack travel mm : 11.40 Tolerance mm : +- 0.20

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 244.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 150.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. :  $\leftarrow 4.00$ 

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.30 Tolerance mm : +- 0.30

Del. quantity

cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. :  $\leftarrow 30.00$ 

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.00

Check tolerance

cm3/1000s. : +-5.00

Spreed Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 01.02.90 : ISO-4113

Combination No. : 0 402 746 877

Injection pump

Pump designation : PES6P120A720RS7157

EP type number : 0 412 726 814

Governor

Governer design. : RQV325...975PA929

: -4K

Governer no.

: 0 421 815 233

Cust. part No. : 3136C5185-P20

Customer-spec. information

Customer : MACK TRUCKS

Motor

: E7-300A

Power KW

: 224.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: **←** 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h

: 165.0

Tolerance L/h : +- 5.0

Test nozzle holde assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 008

Outside diameter : 6.00

**REMARKS** 

x inside diameter: 2.00 x length mm : 600

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80

Tolerance mm

: +-0.05

Check

tolerance mm

: + 0.10

Firing order : 1-5-3-6-2

Phasing

: 0-60-120-180-240

: -300

Tolerance

: + 0.50

Check

tolerance \*NW

: + - 0.75

Start of delivery mark

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.35

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 202.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s.

: +- 3.00

Spreed

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

# (B) SETTING OF INJECTION PUMP WITH GOVERNOR

### GUIDE SLEEVE TRAVEL

Rated speed rpm : 275

guide sleeve

travel mm : 0.75 Tolerance mm : → 0.25

Rated speed rpm : 325

guide sleeve

travel mm : 1.60 Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.10
Tolerance mm : + 0.20

Rated speed rpm : 1000

guide sleeve

travel mm : 8.50
Tolerance mm : +- 0.10

Rated speed rpm : 1200

guide sleeve

travel mm : 10.40
Tolerance mm : + 0.20

### GUIDE SLEEVE POSITION

control lever

position degree : -1

# FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 202.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

## CONTROL LEVER

control lever

position degree : 58.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1020.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1180.0
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

## LOW IDLE

control lever

position degree : 12.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325 rack travel mm : 4.80

Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 975 rack travel mm : 12.35 Tolerance mm : + 0.05

Rated speed rpm : 600 rack travel mm : 11.80 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 5.75 Tolerance mm : +- 5.75

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 975

rack travel mm : 7.90
Tolerance mm : + 0.20

Pressure hPa : 235 rack travel mm : 9.05 Tolerance mm : +- 0.05

Pressure hPa : 570 rack travel mm : 11.80 Tolerance mm : +- 0.20

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 224.00

Tolerance

cm3/i000 strokes : +- 3.00

Check tolerance

cm3/1000s : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 148.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.30 Tolerance mm : +-0.30

Del. quantity

cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. :  $\leftarrow 30.00$ 

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

: 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.05.90 : ISO-4113 Test oil

Combination No. : 0 402 746 886

Injection pump

Pump designation : PES6P12OA72ORS7157

EP type number : 0 412 726 814

Governor

Governer design. : RQV325...975PA944

: -4K

Governer no. : 0 421 815 239

Cust. part No. : 313GC5185-P26

Customer-spec. information

Customer : MACK TRUCKS Motor : E7-250A Power KW : 186.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. L/h : 165.0 Tolerance L/h : + 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 10.45 Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 165.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s.

: +- 3.00

Spreed

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275

auide sleeve

travel mm : 0.75
Tolerance mm : +- 0.25

Rated speed rpm : 325

guide sleeve

travel mm : 1.60
Tolerance mm : + 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.10
Tolerance mm : + 0.20

Rated speed rpm : 1000

guide sleeve

travel mm : 8.50 Tolerance mm : +- 0.10

Rated speed rpm : 1200

guide sleeve

travel mm : 10.40
Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 165.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 58.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.40 Rated speed rpm : 1020.0

Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1135.0
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50

Rated speed rpm : 1250

LOW IDLE

control lever

position degree : 12.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325 rack travel imm : 4.80 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 10.45
Tolerance mm : + 0.05

Rated speed rpm : 600 rack travel mm : 10.90 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 5.10 Tolerance mm : +5.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 10.90
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 600

rack travel mm : 7.70 Tolerance mm : ← 0.20

Pressure hPa : 195
rack travel mm : 8.45
Tolerance mm : + 0.05

Pressure hPa : 375
rack travel mm : 10.10
Tolerance mm : ÷ 0.20

Start interlock

Rated speed rpm : 275

Check

speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 201.50

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s :  $\leftarrow 5.00$ 

Spreed

Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 148.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.00

Check tolerance

cm3/1000S. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.30 Tolerance mm : + 0.30

Del. quantity

cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +-3.00

Check tolerance

cm3/1000s. : + 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

Test oil

: 02.05.90 : ISO-4113

Combination No. : 0 402 746 888

Injection pump

Pump designation : PES6P120A720RS7164

EP type number : 0 412 726 816

Governor

Governer design. : RQV325...875PA878

: -15K

: 0 421 815 235 Governer no.

Cust. part No. : 315GC5181P16

Customer-spec. information

Customer : MACK TRUCKS : EMC6 300L 4VH Motor

Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0

Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity

: 165.0 min. l/h

Tolerance i/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 18.0 Tolerance bar : +- 1.0

Prestroke mm : 2.80 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm : 12.50

Tolerance mm : +-0.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 14.95 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 226.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30
Tolerance mm : +- 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.20 Tolerance mm : +- 0.20

Rated speed rpm : 850

guide sleeve

travel mm : 6.00 Tolerance mm : + 0.10

Rated speed rpm : 1000

guide sleeve

travel mm : 7.55
Tolerance mm : + 0.15

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 226.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 58.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 13.90
Rated speed rpm : 920.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1080.0
Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1160

LOW IDLE

control lever

position degree : 14.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325 rack travei mm : 4.80 Tolerance mm : + 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 14.95
Tolerance mm : + 0.05

Rated speed rpm : 510 rack travel mm : 16.90 Tolerance mm : + 0.10

Rated speed rpm : 700 rack travei mm : 15.70 Tolerance mm : +- 0.10

Rated speed rpm : 600 rack travel mm : 16.50 Tolerance mm : + 0.10

Rated speed rpm : 420 rack travel mm : 8.40 Tolerance mm : +- 8.40

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 16.90
Tolerance mm : +- 0.10

MEASUREMENT

Rated speed rpm : 510

rack travel mm : 11.10
Tolerance mm : + 0.20

Pressure hPa : 375
rack travel mm : 12.75
Tolerance mm : + 0.05

Pressure hPa : 735 rack travel mm : 15.90

Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 510

Del. quantity

cm3/1000 strokes : 308.00

Tolerance

cm3/1000 strokes : +-3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 158.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 11.10 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 180.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 42.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0 : 12.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.02.90 Test oil : ISO-4113

Combination No. : 0 402 748 801

Injection pump

Pump designation : PES8P120A920/4LS7184

EP type number : 0 412 728 802

Governor

Governer design. : RQV325...950PA848

: -16K

Governer no. : 0 421 815 196

Cust. part No. : 313GC5180P2

Customer-spec. information Customer : MACK Motor : 59 500 Power KW : 373.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp.  $^{\circ}$ C : 40.0 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 2 417 413 011

Overflow quantity

min. l/h : 165.0 Tolerance l/h : ← 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 600

#### **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 23.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.00 Tolerance mm : +- 1.00

Firing order : 1- 2- 7- 8- 4- 5

: - 6- 3

Phasing : 0-45-90-135-180-225

: -270-315

Tolerance : +-0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 15.05 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 231.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm: 5.70 : +- 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 41.00 Tolerance cm3/1000 strokes : +- 3.00 Check tolerance : +- 5.00 cm3/1000S.Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s.: 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve : 1.45 travel mm Tolerance mm : +- 0.15 Rated speed rpm : 450 guide steeve : 2.95 travel mm Tolerance mm : + - 0.15Rated speed rpm : 800 guide sleeve : 5.80 travel mm Tolerance mm : + 0.10Rated speed rpm : 1050 guide sleeve : 7.95 travel mm : +- 0.15 Tolerance mm Rated speed rpm : 1200

: 9.65

: +- 0.15

GUIDE SLEEVE POSITION control lever position degree : -1 Rated speed rpm : 1150 Rack travel in mm : 10.00 Tolerance mm :  $\leftarrow$  3.00 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 950 Aneroid pressure : 900 hPa Del. quantity cm3/1000 strokes : 231.00 Tolerance  $cm3/1000 \text{ strokes} : \leftarrow 1.00$ Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 62.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 10.0 Rated speed rpm : 1150 rack travel mm : 14.00 Rated speed rpm : 995.0 Tolerance 1/min : +- 5.0 rack travel mm : 4.00

Tolerance 1/min : + 15.0

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1250

Rated speed rpm : 1150.0

LOW IDLE

guide sleeve

Tolerance mm

travel mm

control lever

position degree : 17.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm

: 275

Rated speed rpm

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 5.70

: +- 0.10 Tolerance mm

TORQUE CONTROL

Rated speed rpm : 950 rack travel mm : 15.05 Tolerance mm : +- 0.05

Rated speed rpm : 650 : 14.60 rack travel mm Tolerance mm : +- 0.10

Rated speed rpm : 500 : 7.00 rack travel mm : +- 7.00 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950 : 900 Pressure hPa : 15.05 rack travel mm : + 0.05 Tolerance mm

**MEASUREMENT** 

: 950 Rated speed rpm

rack travel mm : 9.20 Tolerance mm : +- 0.20

: 230 Pressure hPa : 10.65 rack travel mm : +- 0.05 Tolerance mm

: 535 Pressure hPa : 13.35 rack travel mm Tolerance mm : +- 0.15 Start interlock

Rated speed rpm : 270

Check

speed 1/min : 280

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 900 hPa Rated speed rpm : 650

Del. quantity

cm3/1000 strokes : 255.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000S. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 10.00

Check tolerance

cm3/1000s.: 14.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 146.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s.: +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 11.30 : +- 0.20 Tolerance mm

Del. quantity

cm3/1000 strokes : 165.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

: +- 30.00 cm3/1000S.

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.70 Tolerance mm : +- 0.10

Del. quantity cm3/1000 strokes : 41.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 23.03.90 Test oil : ISO-4113

Combination No. : 0 402 748 802

Injection pump

Pump designation : PES8P120A920/4LS7159

EP type number : 0 412 728 801

Governor

Governer design. : RQV325..1050PA848

: -21K

Governer no. : 0 421 815 201

Cust. part No. : 313GC5178P2

Customer—spec. information Customer : MACK Motor : EE9 502 Power KW : 368.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp.  $^{\circ}$ C : 40.0 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.D

Overflow valve : 2 417 413 011

Overflow quantity

min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00 x Length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 23.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-2-7-8-4-5

: - 6- 3

Phasing : 0-45-90-135-180-225

: -270-315 : +- 0.50

Check

Tolerance

tolerance  $^{\circ}NW$  : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 630

Rack travel in mm : 11.95
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 208.00

Tolerance

cm3/1000 strokes : + 1.00

\_\_\_\_\_\_

Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance : 9.0 cm3/1000s. Rated speed rpm : 325.0 Rack travel in mm: 4.90 Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 43.00 Tolerance cm3/1000 strokes : +-3.00Check tolerance cm3/1000s. : + 5.00Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance : 12.0 cm3/1000s. (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 325 guide sleeve travel mm : 1.45 : + 0.15Tolerance mm Rated speed rpm : 450 guide steeve : 2.50 travel mm : + 0.20Tolerance mm : 800 Rated speed rpm guide sleeve : 4.60 travel mm Tolerance mm : +- 0.20 Rated speed rpm : 1050 guide sleeve : 7.00 travel mm : + 0.10Tolerance mm

: 1200

: 9.05

: +- 0.15

GUIDE SLEEVE POSITION

control lever

position degree : -1 Rated speed rpm : 1220

Rack travel in mm : 10.00 Tolerance mm : +- 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 630

Aneroid pressure hPa : 1200

Del. quantity

cm3/1000 strokes : 208.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 61.0 tolerance degree :  $\leftarrow 4.0$ 

RATED SPEED

rack travel mm : 10.0 Rated speed rpm : 1220

rack travel mm : 12.10
Rated speed rpm : 1100.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1195.0
Tolerance 1/min : +- 15.0

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1300

LOW IDLE

Rated speed rpm

guide sleeve

Tolerance mm

travel mm

control lever

position degree : 13.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

kated speed rpm : 325
rack travel mm : 4.9

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 630
rack travel mm : 11.95
Tolerance mm : + 0.05

Rated speed rpm : 1050 rack travel mm : 13.20 Tolerance mm : +- 0.10

Rated speed rpm : 500 rack travel mm : 5.65 Tolerance mm : + 5.65

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1200
rack travel mm : 13.20
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 1050

rack travel mm : 9.30 Tolerance mm : +- 0.20

Pressure hPa : 195
rack travel mm : 10.25
Tolerance mm : + 0.05

Pressure hPa : 410 rack travel mm : 12.30 Tolerance mm : + 0.20

Start interlock

Rated speed rpm : 280

Check

speed 1/min : 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 1050

Del. quantity

cm3/1000 strokes : 205.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed Tolerance

cm3/1000 strokes : 10.00

Check tolerance

cm3/1000s. : 14.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 172.50

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 9.70 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 170.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. :  $\leftarrow 25.00$ 

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.90 Tolerance mm : +- 0.10

Del. quantity cm3/1000 strokes : 43.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance cm3/1000s.

: +- 5.00

Spreed

Toterance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 01.02.90 : ISO-4113

Combination No. : 0 402 748 803

Injection pump

Pump designation : PES8P120A920/4LS7184

EP type number : 0 412 728 802

Governor

Governer design. : RQV325...950PA848

: -22K

Governer no.

: 0 421 815 202

Cust. part No. : 313GC5180P2

Customer-spec. information Customer : MACK : E9 450 Motor : 331.0 Power KW

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 011

Overflow quantity

: 165.0 min. L/h min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

## **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 23.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm : 12.00 Toterance mm :  $\leftarrow$  1.00

Firing order : 1-2-7-8-4-5

: - 6- 3

Phasing : 0-45-90-135-180-225

: -270-315

Tolerance

: + 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.95 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 211.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm : 5.50 Tolerance mm : **←** 0.10 Del. quantity cm3/1000 strokes : 41.00 Tolerance cm3/1000 strokes : +- 3.00Check tolerance cm3/1000s. : +-5.00Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rom : 325 guide sleeve travel mm : 1.55 Tolerance mm : +- 0.15 Rated speed rpm : 450 guide steeve : 2.95 travel mm Tolerance mm : + 0.15Rated speed rpm : 800 guide sleeve : 5.80 travel mm : + 0.10Tolerance mm Rated speed rpm : 1050 guide sleeve travel mm : 7.95 : + 0.15Tolerance mm Rated speed rom : 1200 guide sleeve : 9.75 travel mm

: +- 0.15

GUIDE SLEEVE POSITION

control lever

position degree : -1 Rated speed rpm : 1145

Rack travel in mm : 10.00 Tolerance mm : +- 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950

Aneroid pressure

hPa : 900 Del. quantity

cm3/1000 strokes : 211.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 60.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.0 Rated speed rpm : 1145

rack travel mm : 12.90 Rated speed rpm : 995.0 Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1140.0
Tolerance 1/min : + 15.0

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

Tolerance mm

control lever

position degree : 16.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Pated speed rpm : 325 rack travel mm : 5.5

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

: 325 Rated speed rpm rack travel mm : 5.50 Tolerance mm : + C.10

TORQUE CONTROL

Rated speed rpm : 950 rack travel mm : 13.95
Tolerance mm : + 0.05

Rated speed rpm : 650 rack travel mm : 13.30 Tolerance mm : +- 0.10

Rated speed rpm : 750 rack travel mm : 13.80 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 6.20 Tolerance mm : +- 6.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950 Pressure hPa : 900 rack travel mm : 13.95 : +- 0.05 Tolerance mm

**MEASUREMENT** 

Rated speed rpm : 950

rack travel mm : 8.90 Tolerance mm : +- 0.20

Pressure hPa : 230 rack travel mm : 10.25 Tolerance mm : +- 0.05

Pressure hPa : 535 rack travel mm : 12.80 Tolerance mm : + 0.20

Start interlock

Rated speed rpm : 270

Check

speed 1/min : 280

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 900 hPa. Rated speed rpm : 650

Del. quantity

cm3/1000 strokes : 219.00

Tolerance

cm3/1000 strokes : +3.00Check tolerance

cm3/1000s.

: +- 6.00 Spreed

Tolerance

cm3/1000 strokes : 10.00

Chack tolerance

: 14. cm3/1000s.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 146.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rom rack travel mm : 11.20 : **←** 0.20 Tolerance mm

Del. quantity

cm3/1000 strokes : 165.00

Tolerance

cm3/1000 strokes : +20.00

Check tolerance

: +- 30.00 cm3/1000s.

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.50 Tolerance mm :  $\leftarrow 0.10$ 

Del. quantity cm3/1000 strokes : 41.00

Tolerance cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. : **←** 5.00

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 16,02,90 : ISO-4113

Combination No. : 0 402 748 803

Injection pump

Pump designation : PES8P120A920/4LS7184

EP type number : 0 412 728 802

Sovernor

Governer design. : RQV325...950PA848

: -22K

Governer no.

: 0 421 815 202

Cust. part No. : 313GC5180P4

Customer-spec. information Customer : MACK : E9 450 Motor : 331.0 Power KW

## TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C : + 2.0 Tolerance °C

Overflow valve : 2 417 413 011

Overflow quantity

: 165.0 min. L/h min. l/h : 165.0 Tolerance l/h : +- 5.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 23.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 12.00 Tolerance mm : +- 1.00

Firing order : 1-2-7-8-4-5

: - 6- 3

Phasing : 0-45-90-135-180-225

: -270-315 : +- 0.50

Tolerance Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.95 Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 211.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance : +- 4.00 cm3/1000s.Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 Rated speed rpm : 325.0 Rack travel in mm: 5.50 Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 41.00 Tolerance cm3/1000 strokes : +-3.00Check tolerance cm3/1000s. : +- 5.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000S.: 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL : 325 Rated speed rpm guide sleeve : 1.55 travel mm Tolerance mm : + 0.15: 450 Rated speed rpm auide sleeve : 2,95 travel mm : + 0.15Tolerance mm : 800 Rated speed rpm guide sleeve : 5.80 travel mm : + 0.10Tolerance mm : 1050 Rated speed rpm guide sleeve : 7.95 travel mm : + 0.15Tolerance mm Rated speed rpm : 1200 guide sleeve travel mm : 9.75

: + 0.15

GUIDE SLEEVE POSITION

control lever

position degree : -1 Rated speed rpm : 1145

Rack travel in mm : 10.00 Tolerance mm : +- 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950

Aneroid pressure

hPa : 900

Del. quantity

cm3/1000 strokes : 211.00

Tolerance

cm3/1000 strokes : +-1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 60.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.0 Rated speed rpm : 1145

rack travel mm : 12.90

rack travel mm : 12.90
Rated speed rpm : 995.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00 Rated speed rpm : 1140.0 Tolerance 1/min : + 15.0

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

Tolerance mm

control lever

position degree : 16.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325 rack travel mm : 5.5

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325 rack travel mm : 5.50 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 950 rack travel mm : 13.95 Tolerance mm : + 0.05

Rated speed rpm : 650 rack travel mm : 13.30 Tolerance mm : + 0.10

Rated speed rpm : 750 rack travel mm : 13.80 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 6.20 Tolerance mm : +- 6.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 900
rack travel mm : 13.95
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 950

rack travel mm : 8.90 Tolerance mm : + 0.20

Pressure hPa : 535 rack travel mm : 12.80 Tolerance mm : + 0.20

Start interlock

Rated speed rpm : 270

Check

speed 1/min : 280

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 650

Del. quantity

cm3/1000 strokes : 219.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. :  $\leftarrow$  6.00

Spreed

Tolerance

cm3/1000 strokes : 10.00

Check tolerance

cm3/1000s. : 14.

Rated speed rpm : 400

Del. quantity

cm3/1000 strokes : 146.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.00

Check tolerance

cm3/1000s. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 11.20 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 165.00

Tolerance

cm3/1000 strokes : + 20.00

Check tolerance

cm3/1000s. :  $\leftarrow 30.00$ 

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.50 : +- 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 41.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance cm3/1000s. : +- 5.00

Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 05.03.90 Test oil : ISO-4113

Combination No. : 0 402 776 803

Injection pump

Pump designation : PES6P120A720LS7107

: -1

EP type number : 0 412 726 805

Governor

Governer design. : RSV350..750P0A520-1

Governer no. : 0 421 833 262

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : CM447 A

Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Overflow quantity

min. L/h : 110.0 Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00

x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25
Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 6-2-4-1-5

: - 3

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow 0.50$ 

Check

tolerance  $^{\circ}NW$  :  $\leftarrow 0.75$ 

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.85 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 225.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance cm3/1000 strokes : 5.0

Check tolerance

cm3/1000S. : 9.0

Rated speed rpm : 350.0

Rack travel in mm : 5.65
Tolerance mm : +- 0.15

Del. quantity

cm3/1000 strokes : 17.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.00

Check tolerance

cm3/1000s. :  $\leftarrow$  6.00

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : -3 Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : + 0.35

governor spring

pre-tension

click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 225.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 81.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 0.6 Rated speed rpm : 800

rack travel mm : 0.85

Tolerance mm : + 0.85
Rated speed rpm : 1000

LOW IDLE

control lever

position degree : 67.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350 rack travel mm : 5.6

Rated speed rpm : 100

CRT mm min. : 19.50

Testing:

Rated speed rpm : 350 rack travel mm : 5.65 Tolerance mm : + 0.15

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 14.85 Tolerance mm : +- 0.05

H05

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 500 Pressure hPa : 750

## **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 320
rack travel mm : -1.70
Tolerance mm : + 0.10

rack travel mm : -2.40 Tolerance mm : +- 0.10

# STARTING FUEL SECTIONS

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 240.00

Tolerance

cm3/1000 strokes : + 10.00

Check tolerance

cm3/1000s. :  $\leftarrow 14.00$ 

## LOW IDLE

Rated speed rpm : 350.0

Rack travel in mm : 5.65 Tolerance mm : +- 0.15

Del. quantity

cm3/1000 strokes : 17.00

Tolerance

cm3/1000 strokes : + 3.00

Check tolerance

cm3/1000s. :  $\leftarrow 6.00$ 

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 19.03.90 Edition : ISO-4113 Test oil

Combination No. : 0 402 776 806

Injection pump

Pump designation : PES6P120A720LS7120

EP type number : 0 412 726 803

Governor

Governer design. : RSV350..1050P0A529

: -3

: 0 421 833 317 Governer no.

Cust. part No. :

Customer-spec. information : MB-NFZ Customer Motor : 0M447 A : 213.0 Power KW

## TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C Tolerance °C : +- 2.0

: 1 417 413 025 Overflow valve

Inlet press. bar : 1.50

Overflow quantity

: 110.0 min. L/h Tolerance l/h : **←** 10.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

: 1 680 750 067 Test lines

Outside diameter : 6.00

x inside diameter: 3.00 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05 Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 6-2-4-1-5

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance "NW : + 0.75

Start of delivery mark

Barrel no.

#### BASIC SETTING

Rated speed rpm : 650

Rack travel in mm: 14.10 : **←** 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 203.00

Tolerance

cm3/1000 strokes : + 1.00

H07

Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance : 9.0 cm3/1000s. Rated speed rpm : 350.0 Rack travel in mm: 5.70 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 17.00 Tolerance cm3/1000 strokes : +- 3.00 Check tolerance cm3/1000s. : +- 6.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE POSITION control lever position degree : -3 Rated speed rpm : 800 Rack travel in mm: 0.50 Tolerance mm : + 0.20 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 650 Aneroid pressure : 650 hPa Del. quantity cm3/1000 strokes : 203.00 Tolerance cm3/1000 strokes : +- 1.00 Check tolerance cm3/1000s. : +- 4.00

Tolerance cm3/1000 strokes : 5.0 Check tolerance : 9.0 cm3/1000s. CONTROL LEVER control lever position degree : 52.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 0.5 Rated speed rpm : 800 rack travel mm : 12.30 Rated speed rpm : 1085.0 Tolerance  $1/\min$ : +- 5.0 rack travel mm : 4.00 Rated speed rpm : 1185.0 Tolerance 1/min : + 15.0 rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300 LOW IDLE control lever position degree : 26.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm rack travel mm : 5.7 Testing: Rated speed rpm : 350 : 5.70 rack travel mm

: + 0.10Tolerance mm

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 650 rack travel mm : 14.10 : +- 0.10 Tolerance mm

Spreed

: 950 Rated speed rpm : 13.80 rack travel mm : +- 0.10 Tolerance mm : 875 Rated speed rpm : 14.30 rack travel mm Tolerance mm : + 0.10: 750 Rated speed rpm : 14.80 rack travel mm Tolerance mm : +- 0.10 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 600 **MEASUREMENT** Rated speed rpm : 600 FUEL DELIVERY CHARACTERISTICS Aneroid pressure : 1200 hPa : 1030 Rated speed rpm Del. quantity cm3/1000 strokes : 195.50 Tolerance cm3/1000 strokes : + 1.50Check tolerance cm3/1000s. : **←** 4.50 Spreed Tolerance cm3/1000 strokes : 8.00 Check tolerance cm3/1000s. : 12. Aneroid pressure : 1200 hPa : 750 Rated speed rpm Del. quantity cm3/1000 strokes : 221.50 Tolerance cm3/1000 strokes : +- 2.50 Check tolerance cm3/1000s. : +- 5.50 Spreed Tolerance cm3/1000 strokes : 8.00 Check tolerance

: 12.00

Aneroid pressure ; ) : 500 Rated speed rpm Del. quantity cm3/1000 strokes : 145.00 Tolerance cm3/1000 strokes : +- 1.00Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 8.00 Check tolerance cm3/1000s. : 12.00 STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 200.00 Tolerance cm3/1000 strokes : +- 10.00 Check tolerance cm3/1000s. : + 14.00LOW IDLE Rated speed rpm : 350.0 Rack travel in mm: 5.70 Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 17.00 Tolerance cm3/1000 strokes : + 3.00 Check tolerance cm3/1000s.: +- 6.00 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

End of test specification sheet

cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 02.10.89 Test oil : ISO-4113

Combination No. : 0 402 846 857A

Injection pump

Pump designation : PE6P130A720RS7150 EP type number : 0 412 636 808

Governor

Governer design. : RQV250...900PA881

Governer no. : 0 421 813 676

Cust. part No. :

Customer-spec. information

Customer : VOLVO-CAR

Motor : TAMD 162 A (PD)

Power KW : 450.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.65
Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.65
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 384.00

Tolerance

cm3/1000 strokes :  $\leftarrow 1.00$ 

Check tolerance

cm3/1000s. : +- 5.00

Spreed

Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 : 250.0 Rated speed rom Rack travel in mm : 3.80 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 19.50 Tolerance cm3/1000 strokes : + 2.50Check tolerance cm3/1000S.: +- 5.00 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 7.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL : 250 Rated speed rpm guide sleeve : 1.10 travel mm : + 0.20Tolerance mm Rated speed rpm : 350 guide sleeve : 2.30 travel mm : + 0.30Tolerance mm : 700 Rated speed rpm guide sleeve : 4.20 travel mm : + 0.30Tolerance mm : 1075 Rated speed rom guide sleeve

: 8.20 travel mm Tolerance mm : + - 0.10Rated speed rpm : 1160

: 9.50

: + 0.20

GUIDE SLEEVE POSITION

guide sleeve

Tolerance mm

travel mm

control lever : -1 position degree Rated speed rpm : 1100

Rack travel in mm : 16.50 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

: 700 Rated speed rpm Aneroid pressure

hPa : 1200

Del. quantity

cm3/1000 strokes : 384.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

CONTROL LEVER

control lever

position degree : 119.0 tolerance degree : + 4.0

RATED SPEED

: 16.5 rack travel mm Rated speed rpm : 1100

: 11.60 rack travel mm Rated speed rpm : 1075.0 : +- 5.0 Tolerance 1/min

: 4.00 rack travel mm Rated speed rpm : 1160.0 Tolerance 1/min : +- 15.0

: 0.50 rack travel mm Tolerance mm : **←** 0.50 Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 67.0 tolerance degree : +- 4.0

# Setting point w/out bumper spring

Rated speed rpm : 250 rack travel mm : 3.8

Rated speed rpm : 100

CRT mm min. : 5.30

Testing:

Rated speed rpm : 250 rack travel mm : 3.80 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 12.65 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.65
Tolerance mm : + 0.05

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 340 rack travel mm : 0.25 Tolerance mm : + 0.05

Pressure hPa : 970
rack travel mm : 3.65
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 217.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. :  $\leftarrow 5.00$ 

LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 3.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 19.50

Tolerance

cm3/1000 strokes : + 2.50

Check tolerance

cm3/1000s. : +- 5.00

Spreed Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 7.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.12.89 Test oil : ISO-4113

Combination No. : 0 403 456 101

Injection pump

Pump designation : PES6MW100/321RS1153

EP type number : 0 413 406 145

Governor

Governer design. : RQ250/1300MW84 Governer no. : 0 420 082 029

Cust. part No. : 2-7724

Customer-spec. information

Customer : MAN
Motor : D 0826 LF

Power KW : 165.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.05 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow 0.50$ 

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.55
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 134.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s :  $\leftarrow 3.00$ 

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.: 6.0

Rated speed rpm : 250.0

Rack travel in mm: 5.00

: +- 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 20.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. : +- 4,50

Spreed Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

: 1440 Rated speed rpm

guide steeve

: 8.90 travel mm : + 0.20Tolerance mm

: 1360

Rated speed rpm

guide sleeve : 6.40 travel mm

Tolerance mm : + 0.10

: 380 Rated speed rpm

guide sleeve

travel mm : 4,40

: + 0.30Tolerance mm

: 250 Rated speed rpm

guide sleeve

: 1.70 travel mm

: +- 0.20 Tolerance mm

GUIDE SLEEVE POSITION

control lever

: -2 position degree Rated speed rpm : 600 Rack travel in mm : 20.00

Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure

: 1000 hPa

Del. quantity

cm3/1000 strokes : 134.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000S. : 6.0

CONTROL LEVER

control lever

position degree : 30.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 20.0 : 600 Rated speed rpm

rack travel mm : 10.50 Rated speed rpm : 1352.5 Tolerance 1/min : +- 7.5

: 4.00 rack travel mm Rated speed rpm : 1450.0 Tolerance 1/min : + 10.0

rack travel at : 4.00

: 0.50 rack travel mm : +- 0.50 Tolerance mm Rated speed rpm : 1530

LOW IDLE

control lever

position degree : 10.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 250 rack travel mm : 5.0 Rated speed rpm : 100 CRT mm min. : 7.00 Testing: : 250 Rated speed rpm : 5.00 rack travel mm : + 0.10Tolerance mm : 2.00 rack travel mm TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 11.55 Tolerance mm : +- 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING : 500 Rated speed rpm rack travel mm : 9.15 Tolerance mm : +- 0.05 **MEASUREMENT** Rated speed rpm : 500 : 180 Pressure hPa : 9.45 rack travel mm : + 0.05 Tolerance mm : 385 Pressure hPa : 10.85 rack travel mm : +- 0.15 Tolerance mm : 1000 Pressure hPa : 11.55 rack travel mm : +- 0.05 Tolerance mm Start interlock Rated speed rpm : 180 Check speed 1/min : 200 FUEL DELIVERY CHARACTERISTICS

Aneroid pressure : 1000 Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 130.50 Tolerance cm3/1000 strokes : +- 1.50Check tolerance cm3/1000s.: + 4.00Spreed Tolerance cm3/1000 strokes : 5.00 Check tolerance cm3/1000s.: 7. Aneroid pressure : 1000 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 132.50 Tolerance cm3/1000 strokes : + 1.50Check tolerance cm3/1000s. : +-4.00Rated speed rpm : 1300 Del. quantity cm3/1000 strokes : 134.00 Tolerance cm3/1000 strokes : + 1.50Check tolerance cm3/1000s. : +- 4.00 Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 75.00 Tolerance cm3/1000 strokes : +- 1.00Check tolerance cm3/1000s. : +- 3.00 STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 135.00 Tolerance cm3/1000 strokes : +- 5.00Check tolerance cm3/1000s.: + 8.00

LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 5.00 : +- 0.10 Tolerance mm

Del. quantity cm3/1000 strokes : 20.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance cm3/1000s. : + 4.50

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 13,12,89 Test oil : ISO-4113

Combination No. : 0 403 456 102

Injection pump

Pump designation : PES6MW100/321RS1153

EP type number : 0 413 406 145

Governor

Governer design. : RQV250...1300MW83

Governer no. : 0 420 083 139

Cust. part No. :

Customer-spec. information

Customer : MAN

: D 0826 LF Motor

: 165.0 Power KW

# TEST BENCH REQUIREMENTS

Test oil inlet

: 40.0 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar

Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 31.0

Tolerance bar  $: \leftarrow 1.0$ 

Prestroke mm : 3.05 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

: + 0.50 Tolerance

Check

tolerance "NW : **←** 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.55

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 134.00

Tolerance

cm3/1000 strokes : +-1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

: 250.0 Rated speed rpm

Rack travel in mm : 5.20 : + 0.10Tolerance mm

Del. quantity

cm3/1000 strokes : 20.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.50

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000S. : 5.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1450

guide sleeve

: 9.60 travel mm Tolerance mm : +- 0.20

Rated speed rpm : 1350

guide sleeve

: 8.50 travel mm : + 0.10Tolerance mm

: 500 Rated speed rpm

guide sleeve

: 3.00 travel mm : + 0.30Tolerance mm

: 250 Rated speed rpm

auide sleeve

: 1.00 travel mm : +- 0.20 Tolerance mm

GUIDE SLEEVE POSITION

control lever

: -1 position degree Rated speed rpm : 1320 Rack travel in mm : 16.50

Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

: 1000 Rated speed rpm

Aneroid pressure

: 1000

Del. quantity

cm3/1000 strokes : 134.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

CONTROL LEVER

control lever

position degree : 52.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 16.5 Rated speed rpm : 1320

: 10.50 rack travel mm : 1352.5 Rated speed rpm Tolerance  $1/\min$ :  $\leftarrow$  7.5

rack travel mm : 4.00 : 1450.0 Rated speed rpm : + 10.0Tolerance 1/min

: 4.00 rack travel mm

: 0.50 rack travel mm : +- 0.50 Tolerance mm Rated speed rpm : 1600

LOW IDLE

control lever

position degree : 14.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250 : 5.2 rack travel mm Rated speed rpm : 100 CRT mm min. : 7.00 Testing: Rated speed rpm : 250 : 5.20 rack travel mm Tolerance mm : + 0.10rack travel mm : 2.00 TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 11.55 Tolerance mm : +- 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 rack travel mm : 9.15 Tolerance mm : + 0.05**MEASUREMENT** : 500 Rated speed rpm Pressure hPa : 180 rack travel mm : 9.45 Tolerance mm : +- 0.05 Pressure hPa : 385 rack travel mm : 10.85 : +- 0.15 Tolerance mm Pressure hPa : 1000 rack travel mm : 11.55 : +- 0.05 Tolerance mm Start interlock Rated speed rpm : 170 Check speed 1/min : 200 FUEL DELIVERY CHARACTERISTICS

Aneroid pressure : 1000 Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 130.50 Tolerance cm3/1000 strokes : +- 1.50Check tolerance cm3/1000s.: +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.00 Check tolerance cm3/1000s. : 7. Aneroid pressure : 1000 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 132.50 Tolerance cm3/1000 strokes : +- 1.50 Check tolerance cm3/1000s. : +- 4.08 : 1300 Rated speed rpm Del. quantity cm3/1000 strokes : 134.00 Tolerance cm3/1000 strokes : + 1.50Check tolerance cm3/1000s. : + 4.00: 500 Rated speed rpm Del. quantity cm3/1000 strokes : 75.00 Tolerance cm3/1000 strokes : + 1.00Check tolerance cm3/1000s. : **←** 3.00 STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 135.00 Tolerance cm3/1000 strokes : + 5.00Check tolerance : + 8.00

cm3/1000s.

LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 5.20 : +- 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 20.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance cm3/1000s. : +- 4.50

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

: 5.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.12.89 Test oil : ISO-4113

Combination No. : 0 403 456 102

Injection pump

Pump designation : PES6MW100/321RS1153

EP type number : 0 413 406 145

Governor

Governer design. : RQV250...1300MW83

Governer no. : 0 420 083 139

Cust. part No. : 2-7725

Customer-spec. information

Customer : MAN

Motor : D 0826 LF

Power KW : 165.0

#### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0

Tolerance bar : + 1.0

Prestroke mm : 3.05 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.55

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 134.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

Rated speed rpm : 250.0

Rack travel in mm : 5.20

Tolerance mm : +0.10

Del. quantity

cm3/1000 strokes : 20.00

Tolerance

cm3/1000 strokes : - 2.00

Check tolerance

cm3/1000s. : + 4.50

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1450

guide sleeve

travel mm : 9.60 Tolerance mm : + 0.20

Rated speed rpm : 1350

guide sleeve

travel mm : 8.50

Tolerance mm : + 0.10

Rated speed rpm : 500

guide sleeve

travel mm : 3.00

Tolerance mm : + 0.30

Rated speed rpm : 250

guide sleeve

travel mm : 1.00

Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever

position degree : -1

Rated speed rpm : 1320

Rack travel in mm : 16.50
Tolerance mm : +- 1.30

Totalice likii . 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 134.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

CONTROL LEVER

control lever

position degree : 52.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 16.5 Rated speed rpm : 1320

rated speed rom . 1320

rack travel mm : 10.50 Rated speed rpm : 1352.5

Tolerance 1/min : +- 7.5

rack travel mm : 4.00

Rated speed rpm : 1450.0

Tolerance 1/min : + 10.0

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : + 0.50

Rated speed rpm : 1600

LOW IDLE

control lever

position degree : 14.0 tolerance degree : +- 4.0

Rated speed rpm : 250 : 5.2 rack travel mm Rated speed rpm : 100 CRT mm min. : 7.00 Testina: Rated speed rpm : 250 rack travel mm : 5.20 Tolerance mm : + 0.10rack travel mm : 2.00 TORQUE CONTROL Rated speed rpm : 1000 : 11.55 rack travel mm : + 0.05Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING : 500 Rated speed rpm : 9.15 rack travel mm Tolerance mm : +- 0.05 **MEASUREMENT** : 500 Rated speed rpm : 180 Pressure hPa rack travel mm : 9.45 : + 0.05 Tolerance mm : 385 Pressure hPa : 10.85 rack travel mm : + 0.15Tolerance mm : 1000 Pressure hPa : 11.55 rack travel ma : +- 0.05 Tolerance mm Start interlock Rated speed rpm : 170 Check speed 1/min : 200 FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1000 Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 130.50 Tolerance cm3/1000 strokes : +- 1.50 Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.00 Check tolerance cm3/1000s. : 7. Aneroid pressure : 1000 Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 132.50 Tolerance cm3/1000 strokes : +- 1.50Check tolerance cm3/1000s. : + 4.00: 1300 Rated speed rpm Del. quantity cm3/1000 strokes : 134.00 Tolerance cm3/1000 strokes : + 1.50Check tolerance cm3/1000s. : +- 4.00 : 500 Rated speed rpm Del. quantity cm3/1000 strokes : 75.00 Tolerance cm3/1000 strokes :  $\leftarrow 1.00$ Check tolerance cm3/1000S. : +- 3.00 STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 135.00 Tolerance cm3/1000 strokes :  $\leftarrow 5.00$ Check tolerance cm3/1000s. : + 8.00

LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 5.20 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 20.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance cm3/1000s. : + 4.50

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15,12,89 Edition Test oil : ISO-4113

Combination No. : 0 403 456 103

Injection pump

Pump designation : PES6MW100/321RS1153

EP type number : 0 413 406 145

Governor

Governer design. : RQV250...1100MW83-1

Governer no. : 0 420 083 182

Cust. part No. : 2-7947

Customer-spec. information

Customer : MAN

: D 0826 L/217 Motor

Power KW : 150.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 : **←** 1.5 Tolerance bar

: 1 680 750 008 Test lines

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 31.0

Tolerance bar : +- 1.0

Prestroke mm : 3.05 Tolerance mm : +- 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

: + 0.50Tolerance

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 11.45

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 133.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

: +- 3.00 cm3/1000s.

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.: 6.0

Rated speed rpm : 250.0

Rack travel in mm: 4.90

: +- 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 21.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s.: +- 4.50

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1210

guide steeve

: 11.30 travel mm : + 0.20 Tolerance mm

: 1150 Rated speed rpm

guide sleeve

: 10.30 travel mm : +- 0.10 Tolerance mm

Rated speed rpm : 550

quide sleeve

: 3.50 travel mm

Tolerance mm : + 0.30

: 250

Rated speed rpm

auide sleeve

: 1.30 travel mm

: + 0.20Tolerance mm

GUIDE SLEEVE POSITION

control lever

position degree : -1 Rated speed rpm : 1130 Rack travel in mm : 16.50 : + 1.30 Tolerance mm

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800

Aneroid pressure

hPa : 1000

Del. quantity cm3/1000 strokes : 133.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

: +- 3.00 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

CONTROL LEVER

control lever

position degree : 58.0

tolerance degree : +- 4.0

RATED SPEED

: 16.5 rack travel mm Rated speed rpm : 1130

: 10.40 rack travel mm Rated speed rpm : 1145.0

Tolerance  $1/\min$ :  $\leftarrow$  5.0

rack travel mm : 4.00 Rated speed rpm : 1210.0

Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50

: **←** 0.50 Tolerance mm

Rated speed rpm : 1300

LOW IDLE

control lever

position degree : 17.0 tolerance degree : +- 4.0

: 250 Rated speed rpm : 4.9 rack travel mm Rated speed rpm : 100 CRT mm min. : 7.00 Testing: Rated speed rpm : 250 : 4.90 rack travel mm : +- 0.10Tolerance mm rack travel mm : 2.00 TORQUE CONTROL : 800 Rated speed rpm : 11.45 rack travel mm Tolerance mm : + - 0.05ANEROID/ALTITUDE COMPENSATOR TEST SETTING : 500 Rated speed rpm rack travel mm : 8.85 : + 0.05Tolerance mm **MEASUREMENT** : 500 Rated speed rpm : 220 Pressure hPa rack travel mm : 9.15 Tolerance mm : + 0.05: 480 Pressure hPa : 10.85 rack travel mm : + 0.15Tolerance mm Pressure hPa : 1000 : 11.45 rack travel mm : + 0.05Tolerance mm Start interlock

: 180

: 200

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure : 1000 Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 130.50 Tolerance cm3/1000 strokes : +- 1.50Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.00 Check tolerance cm3/1000s. : 7. Aneroid pressure : 1000 Rated speed rpm : 1100 Del. quantity cm3/1000 strokes : 133.00 Tolerance cm3/1000 strokes : +- 1.50 Check tolerance cm3/1000s. : +- 4.00 : 500 Rated speed rpm Del. quantity cm3/1000 strokes : 75.00 Tolerance cm3/1000 strokes : + 1.00Check tolerance cm3/1000s. : **←** 3.00 STARTING FUEL DELIVERY : 100 Rated speed rpm Del. quantity cm3/1000 strokes : 135.00 Tolerance cm3/1000 strokes : +- 5.00Check tolerance cm3/1000s. : + 8.00LOW IDLE

Rated speed rpm : 250.0 Rack travel in mm: 4.90 Tolerance mm : + 0.10Del. quantity cm3/1000 strokes : 21.00

Tolerance

cm3/1000 strokes : +- 2.00

Check

Rated speed rpm

speed 1/min

Check tolerance cm3/1000S.

: +- 4.50

Spreed

Tolerance cm3/1000 strokes : 3.0

Check tolerance cm3/1000s. : 5.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 15.12.89 : ISO-4113

Combination No. : 0 403 456 104

Injection pump

Pump designation : PES6MW100/321RS1180

EP type number : 0 413 406 163

Governor

Governer design. : RQ250/1200MW84-1

Governer no. : 0 420 082 037

Cust. part No. : 2-7986

Customer-spec. information Customer : MAN

Motor

: D 0826 LUH

Power KW

: 157.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzie holde

assembly

: 0 681 343 009

Opening pressure

: 173.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x Length mm : 600

x inside diameter: 2.00

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#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

#### BEGINNING OF DELIVERY

Test pressure bar: 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : + 0.

: +- 0.05

Check

tolerance mm : +-0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance "NW

: +- 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.65

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 127.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s.

: **←** 3.00

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

Rated speed rpm : 250.0

Rack travel in mm : 5.30

Tolerance mm :  $\leftarrow$  0.10

Del. quantity

cm3/1000 strokes : 20.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. :  $\leftarrow 4.50$ 

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1320

guide sleeve

travel mm : 8.80 Tolerance mm : + 0.20

Rated speed rpm : 1260

guide sleeve

travel mm : 6.60

Tolerance mm : +- 0.10

Rated speed rpm : 350

guide sleeve

travel mm : 3.70

Tolerance mm : +- 0.30

Rated speed rpm : 250

guide sleeve

travel mm : 1.80

Tolerance mm : +- 0.30

GUIDE SLEEVE POSITION

control lever

position degree : -2

Rated speed rpm : 600

Rack travel in mm : 20.00 Tolerance mm : +- 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure

hPa : 1000

Del. quantity

cm3/1000 strokes : 127.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s : +-3.00

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

CONTROL LEVER

control lever

position degree : 30.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 20.0 Rated speed rpm : 600

rack travel mm : 10.60

Rated speed rpm : 1252.5 Tolerance 1/min : +- 7.5

rack travel mm : 4.00

Rated speed rpm : 1320.0

Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm :  $\leftarrow$  0.50

Rated speed rpm : 1450

LOW IDLE

control lever

position degree : 10.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 250 rack travel mm : 5.3 Rated speed rpm : 100 : 7.30 CRT mm min. Testing: Rated speed rpm : 250 rack travel mm : 5.30 Tolerance mm : **←** 0.10 rack travel mm : 2.00 TORQUE CONTROL Rated speed rpm : 1000 rack travel mm : 11.65
Tolerance mm : + 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 rack travel mm : 9.35 Tolerance mm : +- 0.05 **MEASUREMENT** Rated speed rpm : 500 : 200 Pressure hPa rack travel mm : 9.65 Tolerance mm : **←** 0.05 Pressure hPa : 400 rack travel mm : 11.05 Tolerance mm : +- 0.15 : 1000 Pressure hPa rack travel mm : 11.65 : **←** 0.05 Tolerance mm Start interlock Rated speed rpm : 180 Check speed 1/min : 200 FUEL DELIVERY CHARACTERISTICS Aneroid pressure : 1000 Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 124.50 Tolerance cm3/1000 strokes : + 1.50Check tolerance cm3/1000s. : +- 4.00 Spreed Tolerance cm3/1000 strokes : 5.00 Check tolerance cm3/1000s. : 7. Aneroid pressure : 1000 hPa Rated speed rpm : 800 Del. quantity cm3/1000 strokes : 127.00 Tolerance cm3/1000 strokes : + 1.50Check tolerance cm3/1000s. : +- 4.00 Rated speed rpm : 1200 Del. quantity cm3/1000 strokes : 127.00 Tolerance cm3/1000 strokes : +-1.50Check tolerance cm3/1000s.: +- 4.00 : 500 Rated speed rpm Del. quantity cm3/1000 strokes : 75.00 Tolerance cm3/1000 strokes :  $\leftarrow 1.00$ Check tolerance cm3/1000s. : +- 3.00 STARTING FUEL DELIVERY Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 135.00

Tolerance

cm3/1000 strokes : +- 5.00

Check tolerance

cm3/1000s.: +- 8.00

LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 5.30 Tolerance mm : +- 0.10

Del. quantity cm3/1000 strokes : 20.00

Tolerance

cm3/1000 strokes : → 2.00

Check tolerance

cm3/1000s. : +- 4.50

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance cm3/1000s. : 5.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 15.12.89 : ISO-4113

Combination No. : 0 403 456 105

Injection pump

Pump designation : PES6MW100/321RS1186

EP type number : 0 413 406 168

Governor

Governer design. : RQ250/1200MW84-2

Governer no. : 0 420 082 040

Cust. part No. : 3-7008

Customer-spec. information

Customer : MAN

Motor

: D 0826 LUH

Power KW

: 157.0

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00

x length mm : 600

J05

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 31.0

Tolerance bar  $: \leftarrow 1.0$ 

Prestroke mm : 3.65 Tolerance nm : +- 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm: 7.50

Tolerance mm : 4- 7.50

Firing order : 1-5-3-6-2

: - 4

Phasing

: 0-60-120-180-240

: -300

Tolerance Check

: +- 0.50

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.75

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 127.00

Tolerance

cm3/1000 strokes :  $\leftarrow 1.00$ 

Check tolerance

cm3/1000s.

: +- 3.00

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

Rated speed rpm : 250.0

Rack travel in mm: 5.50 : + 0.10Tolerance mm

Del. quantity

cm3/1000 strokes : 21.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.50

Spread

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1280

guide steeve

: 9.70 travel mm Tolerance mm : +- 0.20

Rated speed rpm : 1250

guide steeve

: 7.60 travel mm Tolerance mm : + 0.10

Rated speed rpm : 350

guide steeve

: 5.50 travel mm : **←** 0.30 Tolerance mm

Rated speed rpm

: 250

auide sleeve

: 2.50 travel mm : + - 0.20Tolerance mm

GUIDE SLEEVE POSITION

control lever

position degree : -2 Rated speed rpm : 600 Rack travel in mm : 15.50

Tolerance mm :  $\leftarrow 0.80$ 

FULL LOAD DELIVERY AT FULL LOAD STOP

: 1000 Rated speed rpm

Aneroid pressure

: 1000

Del. quantity

cm3/1000 strokes : 127.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

CONTROL LEVER

control lever

position degree : 42.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 15.5 Rated speed rpm : 600

rack travel mm : 13.80 Rated speed rpm : 1252.5 Tolerance  $1/\min$ : +- 7.5

rack travel mm : 4.00 Rated speed rpm : 1300.0 Tolerance 1/min : +- 15.0

rack travel mm : 4.00

: 0.50 rack travel mm : + 0.50Tolerance mm Rated speed rpm : 1450

LOW IDLE

control lever

position degree : 12.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 250 rack travel mm : 5.5

Rated speed rpm : 100

CRT mm min. : 7.50

Testing:

Rated speed rpm : 250 rack travel mm : 5.50 Tolerance mm : +- 0.10

rack travel mm : 2.00

TORQUE CONTROL

Dimension a mm : 0.30 Rated speed rpm : 1000 : 14.75 rack travel mm : +- 0.05 Tolerance mm

: 600 Rated speed rpm rack travel mm : 14.85 Toterance mm : +- 0.05

Rated speed rpm : 800 rack travel mm : 14.85 : + 0.05 Tolerance mm

Rated speed rpm : 1200 rack travel mm : 14.35 Tolerance mm :  $\leftarrow 0.05$ 

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 rack travel mm : 12.25 Toterance mm : **←** 0.05

**MEASUREMENT** 

Rated speed rpm : 500

: 200 Pressure hPa : 12.75 rack travel mm : + 0.05 Tolerance mm

: 400 Pressure hPa rack travel mm : 13.95 Tolerance mm : **←** 0.15

: 1000 Pressure hPa rack travel mm : 14.85 Tolerance mm :  $\leftarrow 0.05$ 

Start interlock

Rated speed rpm : 180

Check

speed 1/min : 200

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 1000 hPa Rated speed rpm : 600

Del. quantity

cm3/1000 strokes : 128.00

Tolerance

cm3/1000 strokes : +- 1.50

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 5.00

Check tolerance

cm3/1000s. : 7.

Aneroid pressure

hPa : 1000 Rated speed rpm : 800

Del. quantity

cm3/1000 strokes : 128.00

Tolerance

cm3/1000 strokes : + 1.50

Check tolerance

cm3/1000s. : +- 4.00

Rated speed rpm : 1200

Del. quantity

cm3/1000 strokes : 124.50

Tolerance

cm3/1000 strokes : +- 1.50

Check tolerance

cm3/1000s. : +- 4.00

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 75.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

: +- 3.00 cm3/1000s.

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 135.00

Tolerance

cm3/1000 strokes : +- 5.00

Check tolerance

cm3/1000s. :  $\leftarrow$  8.00

## LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 5.50 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 21.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.00

Check tolerance

cm3/1000s. :  $\leftarrow 4.50$ 

Spreed Tolerance

cm3/1000 strokes : 3.0

Shack tolerance

cm3/1000s. : 5.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 24,11,89 : ISO-4113 Test oil

Combination No. : 0 403 466 121

Injection pump

Pump designation : PES6MW100/120RS1184

EP type number : 0 413 406 171

Governor

Governer design. : RSV375...125UMW2A334

Governer no. : 0 420 085 122

Cust. part No. : 3280646

Customer-spec. information Customer : CUMMINS Motor : 6 BTAA 5.9 : 157.0

Power KW

## TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40.0 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde

: 1 688 901 017 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 31.0 Tolerance bar : + 1.0

Prestroke mm : 3.55
Tolerance mm : +- 0.05

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : - 1.50

Firing order : 1-5-3-6-2

: - 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance \*NW : ← 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.85 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 126.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

Rated speed rpm : 375.0

Rack travel in mm: 6.75

: +- 0.25 Tolerance mm

Del. quantity

cm3/1000 strokes : 18.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

: +- 4.50 cm3/10/30S.

Spread

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : -3 Rated speed rpm : 800

Rack travel in mm: 0.65

Tolerance mm : +- 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rom : 1250

Aneroid pressure

hPa : 800

Del. quantity

cm3/1000 strokes : 126.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0 CONTROL LEVER

control lever

position degree : 56.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 0.6

Rated speed rpm : 800

: 9.80 rack travel mm Rated speed rpm : 1300.0

Tolerance 1/min : +- 5.0

rack travel mm : 4.00

Rated speed rpm : 1385.0

Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : +- 0.70

Rated speed rpm : 1470

LOW IDLE

control lever

position degree : 32.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 375

rack travel mm : 5.7

Rated speed rpm : 100

CRT mm min. : 19.00

Testing:

Rated speed rpm : 375

rack travel mm : 6.75

Tolerance mm : +- 0.25

TORQUE CONTROL

Rated speed rpm : 1250

rack travel mm : 10.85

Tolerance mm : +- 0.05

# ANEROID/ALTITUDE COMPENSATOR TEST

## SETTING

Rated speed rpm . 500 rack travel mm : 9.35 Tolerance mm : + 0.05

## **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 490
rack travel mm : 10.25
Tolerance mm : + 0.05

Pressure hPa : 550 rack travel mm : 10.55 Tolerance mm : +- 0.15

Fressure hPa : 300 rack travel mm : 10.85 Tolerance mm : + 0.05

## FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 81.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. :  $\leftarrow 3.00$ 

Spreed

Tolerance

cm3/1000 strokes : 5.00

Check tolerance

cm3/1000s. : 7.00

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00

Del. quantity

cm3/1000 strokes : 135.00

Tolerance

cm3/1000 strokes : +- 5.00

Check tolerance

cm3/1000s. :  $\leftarrow 8.00$ 

#### LOW IDLE

Rated speed rpm : 375.0

Rack travel in mm : 6.75
Yolerance mm : + 0.25

Del. quantity

cm3/1000 strokes : 18.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.50

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 01.02.90 : ISO-4113

Combination No. : 0 403 474 005

Injection pump

Pump designation : PES4MW100/720RS1127

EP type number : 0 413 404 103

Governor

Governer design. : RSV350...750MWDA318

: -4

Governer no.

: 0 420 085 089

Cust. part No. :

Customer-spec. information

Customer : DB

Motor

: 0M364A

Power KW

: 63.0

TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter: 3.00

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 31.0

Tolerance bar : +- 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1- 3- 4- 2

Phasing

: 0-90-180-270 : +- 0.50

Tolerance

Check

tolerance \*NW

: +- 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.85

Tolerance mm :  $\leftarrow 0.65$ 

Del. quantity

cm3/1000 strokes : 96.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s.

: +- 3.00

Spreed

Tolerance

cm3/1000 strokes : 3.0

J12

Check tolerance

cm3/1000S.

: 6.0

Rated speed rpm : 350.0

Rack travel in mm: 7.60

: + 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 11.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

: -3 position degree Rated speed rpm : 800

Rack travel in mm: 0.65

: **←** 0.35 Tolerance mm

FULL LOAD DELIVERY AT FULL LOAD STOP

: 700 Rated speed rom

Del. quantity

cm3/1000 strokes : 96.00

Tolerance

cm3/1000 strokes :  $\leftarrow 1.00$ 

Check tolerance

cm3/1000s. : +- 3.00

Spreed Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

RATED SPEED

rack travel mm : 0.6 Rated speed rpm : 800

rack travel mm : 4.00 rack travel mm : 4.00

rack travel mm : 1.00

Tolerance mm : +- 0.70 Rated speed rpm : 800

LOW IDLE

control lever

position degree : 65.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

: 350 Rated speed rpm

rack travel mm : 7.6

Testing:

: 350 Rated speed rpm

rack travel mm : 7.60 Tolerance mm : + 0.10

rack travel mm : 2.00

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700

rack travel mm : 13.85

: +- 0.05 Tolerance mm

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 95.00

Tolerance

cm3/1000 strokes : +- 5.00

Check tolerance

cm3/1000S. : + 8.00

LOW IDLE

Rated speed rpm : 350.0

Rack travel in mm: 7.60 : +- 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 11.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance cm3/1000s.

: +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 11.07.97 Edition Test oil : ISO 4113

Combination No. : F 000 409 204

Injection pump

Pump designation : PES6A95D410RS2812 EP type number : 9 400 084 028

Governor

Governer design. : RQV350...1300AB1327L

Governer no. : F 000 420 303

Cust. part No. :

Customer-spec. information

Customer : MWM

: 6.10 TCA EURO I Motor

152.0 Power KW

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance \*C

Overflow valve : 1 419 992 198

Inlet press, bar : 1.5

Test nozzle holde : 0 681 343 009

Opening pressure

: 173.5 bar Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: **←** 0.50 Tolerance

Check

tolerance \*NW : + 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm: 13.15 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 111.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : +- 3.0

Tolerance	<b>-</b> -	+
cm3/1000 strokes	: 3.5	+ control lever
		+ position degree : - 1
Check tolerance		Rated speed rpm : 1480
cm3/1000s.	: 8.0	1
		Rack travel in mm: 16.50
		+ Tolerance mm : +- 1.30
		†
Rated speed rpm	: 350	
		+ FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	6.40	4
Tolerance mm	: + 0.10	Rated speed rpm : 1300
Del. quantity		
	. 14.0	+ Aneroid pressure
cm3/1000 strokes	: 16.0	hPa : 900
Tolerance		+ Del. quantity
cm3/1000 strokes	: +- 2.0	+ cm3/1000 strokes : 111.0
Check tolerance		+ Tolerance
cm3/1000S.	: <b>←</b> 4.5	- cm3/1000 strokes : +- 1.0
Spreed	- 100	Check tolerance
•		
Tolerance		+  cm3/1000s. : + 3.0
cm3/1000 strokes	: 5.5	Spreed
Check tolerance		+ Tolerance
cm3/1000S.	: 9.0	+ cm3/1000 strokes : 3.5
		Check tolerance
GUIDE SLEEVE TRAV	'EL	CONTROL LEVER
		+ control lever
Rated speed rpm	: 800	position degree : 113.0
guide sleeve		+ tolerance degree : + 4.0
travel mm	: 3.95	toterance degree : 4.0
· -	: + 0.25	T DATES OBEES
Tolerance mm	: - 0.25	+ RATED SPEED
	4===	track travel mm : 12.10
Rated speed rpm	: 1350	+ Rated speed rpm : 1360
guide sleeve		+ Tolerance 1/min : +- 5
travel mm	: 7.20	+
Tolerance mm	: +- 0.10	rack travel mm : 4.00
		Rated speed rpm : 1545
Peted speed nom	: 300	
Rated speed rpm	. 500	† Tolerance 1/min : +- 15
guide sleeve	. 4.05	T
travel mm	: 1.05	+ rack travel mm : 0.50
Tolerance mm	: <b></b> 0.25	→ Tolerance mm : +- 0.50
		Rated speed rpm : 1730
Rated speed rpm	: 550	1
guide sleeve		1
	, 275	Ţ
travel mm	2.75	†
Tolerance mm	: +- 0.25	+
		+ LOW IDLE
Rated speed rpm	: 1500	+
guide steeve		1
travel mm	: 8.55	control lever
Tolerance mm		position degree : 68.0
IOCCUMICE IN	. += 0.63	
		tolerance degree : + 4.0
		<del></del> †
GUIDE SLEEVE POSI	TION	+ Setting point w/out bumper spring
		+
		+ Rated speed rpm : 100
		•

COT me -i-	0.50	†	
CRT mm min.	: > 8.50	FUEL DELIVERY CH	ARACTERISTICS
Testing:		<u> </u>	
Rated speed rpm	: 350	Aneroid pressure	
rack travel mm	: 6.40	→ hPa	: 900
Tolerance mm	: +- 0.10	+ Rated speed rpm	
		+ Del. quantity	
Rated speed rpm	: 390	cm3/1000 strokes	: 109.0
		+ Tolerance	. 2.2
TORQUE CONTROL		cm3/1000 strokes Check tolerance	
Rated speed rpm	: 1300	+ cm3/1900s.	
nach travel an	1300	Spreed	: +- 4.0
rack travel mm Tolerance mm	. + 0.05	Tolerance	
ioterative inii		cm3/1000 strokes	. 50
Rated speed rpm	: 800	Check tolerance	
rack travel mm	13.15	+ cm3/1000s.	
Tolerance mm		+	. •••
		+	
ANEDATA (A) TTO C		Aneroid pressure	
ANEROID/ALTITUDE		+ hPa + Rated speed rpm	500
COMPENSATOR TEST			: 500
		+ Del. quantity + cm3/1000 strokes	: 52.0
SETTING		+ Tolerance	: 32.0
SELLING.		+ cm3/1000 strokes	· + 1 O
Rated speed rpm	500	Check tolerance	
Pressure hPa		- cm3/1909s.	· +- 3 A
rack travel mm		Spreed	
Tolerance mm		Tolerance	
		cm3/1000 strokes	: 3.5
Rated speed rpm	: 500	+ Check tolerance	
Pressure hPa	: -	+ cm3/1000s.	: 8.0
		+	
MEASUREMENT		<u> </u>	
Rated speed rpm	: 500	STARTING FUEL DE	LIVERY
Pressure hPa	: 350	Rated speed rpm	: 100
rack travel mm	: 2.50	+ rack travel mm	
Tolerance mm	: +- 0.10	+ Tolerance mm	: +- 1.00
		+ Del. quantity	
Pressure hPa	: 200	+ cm3/1000 strokes	: 146.5
rack travel mm	: 1.10	+ Tolerance	
Tolerance mm	: <b>←</b> 0.05	+ cm3/1000 strokes	: ← 8.0
		+ Check tolerance	
Start interlock			: +- 11.0
		†	
Rated speed rpm		†	
Rated speed rpm	: < 200	LOW IDLE	
Check		LOW IDEE	
speed 1/min	: > 80	Rated speed rpm	: 350
Check		+	- <del></del>
speed 1/min	: < 220	Rack travel in m	n: 6.40
		+ Tolerance mm	: +- 0.10
		1	

Del. quantity cm3/1000 strokes	:	16.0
Tolerance cm3/1000 strokes	: +	2.0
Check tolerance cm3/1000s. Spreed	: +-	4.5
Tolerance cm3/1000 strokes	:	5.5
Check tolerance cm3/1000s.	:	9.0

#### BASIC SETTING Note remarks Del. quantity cm3/1000 strokes : 74.5 Refer to Service Info for test and adjustment instructions. See microcard(s) W400/... Tolerance cm3/1000 strokes : $\leftarrow$ 0.5 Edition : 29.11.96 Test oil : ISO 4113 Check tolerance cm3/1000s. : +-2.5 Combination No. : 0 400 846 258 Spreed Injection pump Pump designation : PES6A90D410RS2293Z Tolerance EP type number : 0 410 896 037 cm3/1000 strokes : 3.0 Governor Check tolerance Governer design. : RQV300...1425AB740L cm3/1000s. 4.5 : 0 420 212 037 Governer no. Cust. part No. : Rated speed rpm : 300 Customer-spec. information (B) SETTING OF INJECTION PUMP Customer : MB-NFZ WITH GOVERNOR TEST BENCH REQUIREMENTS FULL LOAD DELIVERY AT FULL LOAD STOP Test oil inlet Rated speed rpm : 1375 temp. °C 40 Aneroid pressure Tolerance °C 2.0 Del. quantity cm3/1000 strokes : 74.5 Inlet press. bar : 1.5 Tolerance cm3/1000 strokes : + 0.5Opening pressure Check tolerance 173.5 cm3/1000s. : +-2.5 bar Tolerance bar : + 1.5 Spreed Tolerance cm3/1000 strokes : 3.0 Check tolerance 4.5 REMARKS cm3/1000s. RATED SPEED (A) INJECTION PUMP SETTING VALUES Set equal delivery quant. rack travel mm : 4.00 per values \_\_\_\_\_ rack travel mm : 4,00 BEGINNING OF DELIVERY 26.0 Test pressure bar : Tolerance bar : +- 1.0 LOW IDLE

BOSCH INJ. PUMP TEST SPECIFICATIONS

Setting point w/out bumper spring

Rated speed rpm : 100

Testing:

rack travel mm : 2.00

Start interlock

Rated speed rpm : > 100

Check

speed 1/min : > 80

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) \\400/...

: 10.07.97 Edition Test oil : ISO 4113

Combination No. : 0 400 846 597

Injection pump

Pump designation : PES6A90D410RS2813 EP type number : 0 410 896 089

Governor

Governer design. : RQV300...1250AB1264L

Governer no. : 0 420 212 233

Cust. part No. :

Customer-spec. information

Customer : IVECO-FIAT : 8065.25.000 Motor Power KW

: 145.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 har Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

#### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 11.30 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 77.0

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s.

: +- 2.5

## Spreed

To	ler	an	ce
C	2/1	<b>M</b>	η.

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s.7.0

Rated speed rpm : 325

Rack travel in mm : 8.30 Tolerance mm

Del. quantity cm3/1000 strokes : 13.0 Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0 Check tolerance cm3/1000s.: +- 4.0 Spreed

Tolerance

cm3/1000 strokes : 4.5 Check tolerance

7.0 cm3/1000s.

## (B) SETTING OF INJECTION PUMP WITH GOVERNOR

## GUIDE SLEEVE TRAVEL

Rated speed rpm 897 guide sleeve

travel mm 5.25 : **←** 0.25 Tolerance mm

300 Rated speed rpm guide sleeve

0.85 travel nm : +- 0.25 Tolerance mm

445 Rated speed rpm guide sleeve

travel mm 2.45 : + 0.25 Tolerance mm

Rated speed rpm 540

guide sleeve 3.05 travel mm Tolerance mm : **←** 0.25

Rated speed rpm : 1324

guide sleeve

8.25 travel mm Tolerance mm : +- 0.25

## GUIDE SLEEVE POSITION

control lever

position degree Rated speed rpm : 1455

Rack travel in mm: 10.90 Tolerance mm : +- 1.30

## FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm 1250

Aneroid pressure

hPa 700

Del. quantity cm3/1000 strokes : 77.0

Tolerance cm3/1000 strokes : +-

Check tolerance

: +cm3/1000s. 2.5

Spreed Tolerance

cm3/1000 strokes : 3.0 Check tolerance

cm3/1000s.7.0

## CONTROL LEVER

control lever

position degree : 105.0 tolerance degree : +- 4.0

RATED SPEED

10.30 rack travel mm Rated speed rpm 1320 Tolerance 1/min

rack travel mm 4.00 Rated speed rpm Tolerance 1/min

rack travel mm : 0.50 : ← 0.50 Tolerance mm

Rated speed rpm : 1550

## LOW IDLE

control lever

79.0 position degree tolerance degree : +-

Setting point w/out bumper spring

	• 225
Rated speed rpm	, , ,
CRT mm min.	: > 10.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 325 : 8.30 : + 0.10
Rated speed rpm	: 425
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 400 : 12.85 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 900 : 11.60 : + 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 400 : 700 : 12.50 : +- 0.05
Rated speed rpm Pressure hPa rack travel mm	: 700 : 12.50 : +- 0.05 : 400 : - : 10.80
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 700 : 12.50 : +- 0.05 : 400 : -
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT	: 700 : 12.50 : + 0.05 : 400 : - : 10.80 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm	: 700 : 12.50 : + 0.05 : 400 : - : 10.80 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT	: 700 : 12.50 : + 0.05 : 400 : - : 10.80 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm	: 700 : 12.50 : + 0.05 : 400 : - : 10.80 : + 0.05 : 400 : 350 : 12.10

ted speed rpm : > 100 ted speed rpm : < 220 teck teed 1/min : > 80 teck
eck eed 1/min :> 80
eed 1/min : > 80
peed 1/min : < 250
EL DELIVERY CHARACTERISTICS
eroid pressure
Pa : 700 sted speed rpm : 700
el. quantity
3/1000 strokes : 80.0 lerance
$\frac{13}{1000}$ strokes : + 1.5
eck tolerance 3/1000s. : +- 3.5
meroid pressure
ited speed rpm : 500
el. quantity 13/1000 strokes : 51.5
lerance
3/1000 strokes : +- 0.5 eck tolerance
3/1000s. : +- 2.5
ARTING FUEL DELIVERY
CO took like 40 M colons
ESS test: With 12 V solenoid Tack must reach start posit

Rated speed rpm	:		100
rack travel mm Tolerance mm	:	+	20.50
Del. quantity			445.0
cm3/1000 strokes Tolerance	:		115.0
cm3/1000 strokes	:	+-	7.5
Check tolerance cm3/1000s.	:	+-	10.0

# LOW IDLE

Rated speed rpm	:	325
Rack travel in mm Tolerance mm	: +-	8.30 0.10
Del. quantity cm3/1000 strokes Tolerance	:	13.0
cm3/1000 strokes	: +-	2.0
Check tolerance cm3/1000s.	: +-	4.0
Spreed Tolerance		. =
cm3/1000 strokes Check tolerance	:	4.5
cm3/1000s.	:	7.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) H400/...

Edition

: 16.07.97 : ISO 4113

Test oil

Combination No. : 0 400 864 108

Injection pump

Pump designation : PES4A95D410/3RS2789

EP type number : 0 410 894 995

Governor

Governer design. : RS325...1250A0C916L

Governer no. : 0 420 220 014

Cust. part No. : 0423 2128 KY

Customer-spec. information Customer : KHD-DMI : F4L913 : 59.0 Motor Power KW

#### TEST BENCH REQUIREMENTS

Inlet line

: 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure that the state of the state

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

: 0-90-180-270 : +- 0.50 Phasing

Tolerance

Check

tolerance \*NW : + 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 11.35 Tolerance mm:  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 76.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s.

: <del>←</del> 3.0

Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance	
cm3/1000s. : 8.0 -	CONTROL LEVER
	control lever
Rated speed rpm : 325	position degree : 87.0 tolerance degree : +- 4.0
Rack travel in mm: 8.80	
Tolerance mm : +- 0.10	RATED SPEED
Del. quantity	rack travel mm : 10.35
cm3/1000 strokes : 11.5	Rated speed rpm : 1295
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0 Check tolerance	rack travel mm : 4.00
cm3/1000s. : +- 4.5	Rated speed rpm : 1355
Spreed -	Tolerance 1/min : + 15
Tolerance	
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 9.0 -	Rated speed rpm : 1505
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	
-	LOW IDLE
<del>-</del>	
CUIDE OF SELECTION	Testing:
GUIDE SLEEVE POSITION -	t Rated speed rpm : 325
	Rated speed rpm : 325 rack travel mm : 8.80
control lever	Tolerance mm : +- 0.10
position degree : FREE	
Rated speed rpm : 800	
- 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1	TORQUE CONTROL
Rack travel in mm : 0.50 - Tolerance mm : + 0.20 -	Rated speed rpm : 1250 rack travel mm : 11.35
Tolerance mm : + 0.20	rack travel mm : 11.35 Tolerance mm : + 0.05
governor spring	rocer arice man
pre-tension -	
click setting x : 3.00	
1	+
FULL LOAD DELIVERY AT FULL LOAD STOP	
FULL LUMP DELIVERT AT FULL LUMP STOP	STARTING FUEL DELIVERY
Rated speed rpm : 1250	STRICTION COME PROTECTION
Aneroid pressure	Rated speed rpm : 100
hPa : -	rack travel mm : 20.25
Del. quantity	Tolerance mm : + 0.75
cm3/1000 strokes : 76.0	Del. quantity
Tolerance - cm3/1000 strokes : + 1.0 -	cm3/1000 strokes : 120.0
cm3/1000 strokes : +- 1.0 Check tolerance	Tolerance : +- 7.5
cm3/1000s : +- 3.0	Check tolerance
Spreed	cm3/1000s. : +- 10.0
Tolerance	
cm3/1000 strokes : 3.5	}

## LOW IDLE

Rated speed rpm	:	325
Rack travel in mm Tolerance mm Del. quantity	: +-	8.80 0.10
cm3/1000 strokes Tolerance	:	11.5
	: +-	2.0
cm3/1000s. Spreed	: +	4.5
Tolerance cm3/1000 strokes Check tolerance	:	5.5
cm3/1000s.	:	9.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.07.97 : ISO 4113

Combination No. : 0 400 866 197

Injection pump

Pump designation : PES6A100D320/3RS2691

: -4 EP type number : 9 410 230 030

Covernor

Governer design. : RSV450...1100A0C2238

: -3R

Governer no. : 0 420 233 330

Cust, part No. :

Customer-spec. information

Customer · CDC

Motor

: 6 CT 830

Power KW : 151.0

TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0 temp. °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter :

x length mm : 600

2.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 28.0

Tolerance bar :  $\leftarrow$  1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300 Tolerance : +- 0.50

Check

tolerance \*NW

: +- 0.75

Start of delivery mark

\*NW after s.o.d. : 11.00

Tolerance  $: \leftarrow 0.50$ 

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

	+
Rack travel in mm : 12.15 Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 120.5	Rated speed rpm : 1100 Aneroid pressure
Tolerance cm3/1000 strokes : + 1.0	+ hPa : 900 - Del. quantity - cm3/1000 strokes : 120.5
Check tolerance cm3/1000s. ; + 3.5	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Spreed	- cm3/1000s. : +- 3.5 - Spreed - Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : 4.0 Check tolerance
Check tolerance cm3/1000s. : 6.5	- cm3/1000s. : 6.5
	CONTROL LEVER
Rated speed rpm : 450  Rack travel in mm : 5.70	control lever position degree : 96.0 tolerance degree : +- 4.0
Tolerance mm : + 0.10  Del. quantity  cm3/1000 strokes : 18.0	RATED SPEED
Tolerance cm3/1000 strokes : +- 2.0 Check tolerance	rack travel mm : 4.00 Rated speed rpm : 1210 Tolerance 1/min : +- 15
cm3/1000S. : +- 4.5 Spreed Tolerance	ASSEMBLY GOVERNOR SETTING
cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0	Rated speed rpm : 1143 rack travel mm : 11.15
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1200 Tolerance 1/min : + 5 rack travel mm : 4.00
	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1360
GUIDE SLEEVE POSITION	Detect annual an
control lever position degree : - 3	Rated speed rpm : 1144 rack travel mm : 11.15
Rated speed rpm : 800  Rack travel in mm : 0.50	Rated speed rpm : 1201 Tolerance 1/min : + 5 rack travel mm : 4.00
Tolerance mm : +- 0.20	rack travel mm : 0.85 Tolerance mm : + 0.55
governor spring  pre-tension  click setting x : 4.25	1
	Rated speed rpm : 1145 rack travel mm : 11.15

	1
Rated speed rpm : 1202 Tolerance 1/min : +- 5 rack travel mm : 4.00	Rated speed rpm : 450 rack travel mm : 5.70 Tolerance mm : + 0.10
rack travel mm : 0.85 Tolerance mm : +- 0.55	rack travel mm : 2.00 Rated speed rpm : 515 Tolerance 1/min : + 30
Rated speed rpm : 1146 rack travel mm : 11.15  Rated speed rpm : 1203 Tolerance 1/min : + 5	TORQUE CONTROL Rated speed rpm : 1100 rack travel mm : 12.15 Tolerance mm : + 0.05
rack travel mm : 4.00  rack travel mm : 0.85  Tolerance mm : + 0.55	Rated speed rpm : 750 rack travel mm : 13.10 Tolerance mm : + 0.10
Rated speed rpm : 1147 rack travel mm : 11.15	Rated speed rpm : 1100 rack travel mm : 11.15 Tolerance mm : +- 0.05
Rated speed rpm : 1204 Tolerance 1/min : +- 5 rack travel mm : 4.00	ANEROID/ALTITUDE COMPENSATOR TEST
rack travel mm : 0.85 Tolerance mm : + 0.55	SETTING
Rated speed rpm : 1148 rack travel mm : 11.15	Rated speed rpm : 500 Pressure hPa : 900 rack travel mm : 13.10 Tolerance mm : +- 0.10
Rated speed rpm : 1205 Tolerance 1/min : + 5 rack travel mm : 4.00	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 10.45
rack travel mm : 0.85 Tolerance mm : + 0.55	Tolerance mm : +- 0.10  MEASUREMENT
LOW IDLE	Rated speed rpm : 500
control lever position degree : 74.0 tolerance degree : +- 4.0	Pressure hPa : 560 rack travel mm : 12.35 Tolerance mm : +- 0.20
Setting point w/out bumper spring	Pressure hPa : 385 + rack travel mm : 11.45 + Tolerance mm : +- 0.05
Rated speed rpm : 450 rack travel mm : 5.20 Tolerance mm : + 0.10	
Rated speed rpm : 100	+ FUEL DELIVERY CHARACTERISTICS
CRT mm min. : > 19.50	Aneroid pressure hPa : 900
Testing:	hPa : 900 Rated speed rpm : 750

el. quantity m3/1000 strokes	:	137.5	
folerance m3/1000 strokes		2.0	
ms/ludu strokes Check tolerance	: +-	2.0	
:m3/1000s.	: +-	4.0	
	•	*.0	
	<del></del>		-
Ineroid pressure IPa	•	-	
Rated speed rpm	:	500	
el. quantity			
m3/1000 strokes	:	82.5	
olerance m3/1000 strokes	•	1.0	
Check tolerance	,	٠. ٠	
m3/1000s.	: +-	3.0	
TARTING FUEL DEL	IVE'RY		
Rated speed rpm	:	100	
ack travel mm	:	20.00	
olerance mm	: +-	1.00	
el. quentity		4// 0	
:m3/1000 strokes Tolerance	:	146.0	
:m3/1000 strokes	: +-	10.0	
heck tolerance	•		
m3/1000s.	: +-	13.0	
	<del></del>		
OW IDLE			
Rated speed rpm	:	450	
Rack travel in mm	:	5.70	
olerance mm	: +-	0.10	
Pel. quantity		10 0	
:m3/1000 strokes Tolerance	•	18.0	
m3/1000 strokes	: +-	2.0	
heck tolerance			
:m3/1000s.	: +-	4.5	
ipreed Tolerance			
m3/1000 strokes	:	6.0	
theck tolerance	•	5.0	
m3/1000s.	:	8.0	
		<del></del>	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.04.97 Test oil : ISO 4113

Combination No. : 0 400 866 219

Injection pump

Pump designation : PES6A95D12ORS2860

EP type number : 0 410 896 889

Governor

Governer design. : RSV410...1050A0C2260

: -38

Governer no.

: 0 420 233 344

Cust. part No. : 32 82 684

Customer-spec. information Customer : CUMMINS Motor : 6 BT

Power KW

: 113.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : ← 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

**K04** 

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 2.15

: +- 0.05 Tolerance mm

Check

: + 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 11.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 10.90 Tolerance mm : +- 0.05

Del. quantity - cm3/1000 strokes : 97.0 -	Aneroid pressure
cms/ (uou strokes : 97.0	hPa : 1100
Tolerance	+ Del. quantity + cm3/1000 strokes : 97.0
cm3/1000 strokes : +- 1.0	Tolerance
CIBS (DOU SCHOKES : THE FLO	- cm3/1000 strokes : +- 1.0
Check tolerance	Check tolerance
cm3/1000s. : +- 3.0	cm3/1000s. : +- 3.0
. 4 = 5.0	Spread : +- 3.0
Spreed	Tolerance
opi eed	cm3/1000 strokes : 3.5
Tolerance	Check tolerance
cm3/1000 strokes : 3.5	cm3/1000s. : 8.0
	. 0.0
Check tolerance	
cm3/1000s. : 8.0	
	CONTROL LEVER
•	<del> </del>
. D. A. J	control lever
Rated speed rpm : 430	position degree : 90.0
	tolerance degree : +- 4.0
Rack travel in mm: 7.20	DATE: 0055
Tolerance mm : + 0.10	RATED SPEED
Del. quantity	rack travel mm : 9.90
cm3/1000 strokes : 21.0	Rated speed rpm : 1095
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	†
Check tolerance	rack travel mm : 4.00
cm3/1000s. : +- 4.5	Rated speed rpm : 1140
Spreed	Tolerance 1/min : +- 15
Tolerance	7
cm3/1000 strokes : 5.5	rack travel mm : 0.85
Check tolerance	Tolerance mm : ~ 0.55
cm3/1000s. : 9.0	Rated speed rpm : 1330
	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1175
WITH GOVERNOR	Tolerance 1/min : + 15
WITH GOACHAON	roterance minimi.
	+
CUIDE OF COUR DOCTTION	†
GUIDE SLEEVE POSITION	LOW IDLE
	- 2011 1022
control lever	
position degree : - 3	control lever
Rated speed rpm : 800	position degree : 70.0
•	tolerance degree : +- 4.0
Rack travel in mm: 0.50	+
Tolerance mm : + 0.20	Setting point w/out bumper spring
	+
governor spring	Rated speed rpm : 430
pre-tension 4.35	rack travel mm : 6.70
click setting x : 1.75	Tolerance mm : +- 0.10
•	Dated aread 100
EIU LOAN NELTWEDY AT EIU LOAN CTOD	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	CDT 10 50
Rated speed rom : 1050	CRT mm min. : > 19.50
Rated speed rpm : 1050	Testing:
	i coenige

Rated speed rpm rack travel mm Tolerance mm rack travel mm Rated speed rpm Tolerance 1/min	: 7.20 : + 0.10 : 2.00 : 590	Del. quantity cm3/1000 strokes : 98.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0  Aneroid pressure
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 10.90 : + 0.05	hPa :
Rated speed rpm rack travel mm Tolerance mm	: 11.80	+ cm3/1000 strokes : + 1.0 Check tolerance - cm3/1000s. : + 3.0
Rated speed rpm rack travel mm Tolerance mm	: 550 : 11.50 : + 0.10	STARTING FUEL DELIVERY  Rated speed rpm : 100  rack travel mm : 14.00
ANEROID/ALTITUDE COMPENSATOR TEST		Tolerance mm : +- 0.20  Del. quantity  cm3/1000 strokes : 115.0
SETTING		Tolerance cm3/1000 strokes : +- 7.5 Check tolerance
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1100	cm3/1000s. : +- 10.0
Rated speed rpm Pressure hPa rack travel mm	: -	LOW IDLE  Rated speed rpm : 430
Tolerance mm MEASUREMENT	: +- 0.10	Rack travel in mm: 7.20 Tolerance mm: + 0.10 Del. quantity
Rated speed rpm		cm3/1000 strokes : 21.0 Tolerance
Pressure hPa rack travel mm Tolerance mm		+ cm3/1000 strokes : + 2.0 + Check tolerance + cm3/1000s. : + 4.5
Pressure hPa	: 730	+ Spreed + Tolerance
rack travel mm Tolerance mm		cm3/1000 strokes : 5.5 Check tolerance cm3/1000s. : 9.0
FUEL DELIVERY CH	ARACTERISTICS	
Aneroid pressure hPa Rated speed rpm	: 1100	End of test specification sheet

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 15.07.97 Test oil : ISO 4113

Combination No. : 0 400 876 188

Injection pump

Pump designation : PES6A80D410RS2085X

EP type number : 0 410 886 045

Governor

Governer design. : RSV350...1400A2C1052

: L

Governer no. : 0 420 232 406

Cust. part No. :

Customer—spec. information Customer : MB-NFZ Motor : CM352 Power KH : 80.9

### TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temp. \*C : 40 Tolerance \*C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzie holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

x inside diameter: 2.0 x length mm : 600

BEGINNING OF DELIVERY

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 9.05

Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 52.5

Tolerance

cm3/1000 strokes : +- 0.5

Check tolerance

cm3/1000s. : +- 2.0

Spreed

Tolerance

cm3/1000 strokes : 2.5

Check tolerance

cm3/1000s. : 4.0

Rated speed rpm : 350

Del. quantity

cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 2.5

K07

Tolerance cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 3.5 LOW IDLE (B) SETTING OF INJECTION PUMP Setting point w/out bumper spring WITH GOVERNOR Rated speed rpm : 350 rack travel mm : 6.70 Tolerance mm : + 0.10 GUIDE SLEEVE POSITION Rated speed rpm : 100 control lever CRT mm min. : > 19.00 position degree : -3
Rated speed rpm : 800 Testina: rack travel mm : 2.00 Rated speed rpm : 530 Rack travel in mm: 0.50 2.00 Tolerance mm : + 0.20 Tolerance 1/min : +- 30 governor spring pre-tension click setting x : 5.30TORQUE CONTROL Rated speed rpm : 1400 rack travel mm : 9.05
Tolerance mm : + 0.05 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 500 rack travel mm : 9.95 Rated speed rpm : 1400 rack travel mm : 9.95
Tolerance mm : + 0.05 Aneroid pressure hPa Del. quantity Rated speed rpm : 850 rack travel mm : 9.60 Tolerance mm : +- 0.10 cm3/1000 strokes : 52.5 Tolerance cm3/1000 strokes :  $\leftarrow$  0.5 Check tolerance cm3/1000s. : +- 2.0 Rated speed rpm : 950 rack travel mm : 9.25 Tolerance mm : + 0.15 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. : 4.0 FUEL DELIVERY CHARACTERISTICS CONTROL LEVER Aneroid pressure control lever hPa position degree : 112.0 Rated speed rpm : 500 tolerance degree : + 4.0 Del. quantity cm3/1000 strokes : 48.0 RATED SPEED Tolerance cm3/1000 strokes : +- 1.0 cm3/1000 service Check tolerance : + 3.0 rack travel mm : 0.85
Tolerance mm : + 0.55 Rated speed rpm : 1680 Aneroid pressure 4.00 rack travel mm : Rated speed rpm : 1530 hPa **K08** 

Tolerance 1/min : +- 15

Spreed

	: 850
Del. quantity cm3/1000 strokes	: 50.0
Tolerance cm3/1000 strokes	: + 1.5
Check tolerance cm3/1000s.	: +- 3.5

# STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		14.40
Tolerance mm	:	+	0.20
Del. quantity			
cm3/1000 strokes	:		83.0
Tolerance			
cm3/1000 strokes	:	+	5.0
Check tolerance			
cm3/1000S.	:	+	8.0

# LOW IDLE

Rated speed rpm Del. quantity	*	350	
cm3/1000 strokes	:	11.0	
Toterance			
cm3/1000 strokes	: +-	1.0	
Check tolerance			
cm3/1000s.	: +-	2.5	
Spreed			
Tolerance			
cm3/1000 strokes	:	2.0	
Check tolerance			
cm3/1000s.	:	3.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.07.97 Test oil : ISO 4113

Combination No. : 0 400 876 293

Injection pump

Pump designation : PES6A90D410RS2596 EP type number : 0 410 896 073

Governor

Governer design. : RSV350...1400A081141

Governer no. : 0 420 232 423

Cust. part No. :

Customer-spec. information Customer : MB-NFZ Motor : 0M352A Power KW : 123.0

### TEST BENCH REQUIREMENTS

Inlet line : 1.2

Test oil inlet

temo. °C Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar : 173.5 Tolerance bar : ← 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 2.05 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240 : -300

Tolerance : +- 0.50

Check

tolerance \*NW : +- 0.75

# BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm: 11.95 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 74.5

Tolerance

cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s. : +- 2.5

Spreed

Tolerance +	
cm3/1000 strokes : 3.0	CONTROL LEVER
Check tolerance cm3/1000s. : 4.5	control lever position degree : 114.0 tolerance degree : +- 4.0
Rated speed rpm : 350	RATED SPEED
Del. quantity cm3/1000 strokes : 11.0	rack travel mm : 0.85 Tolerance mm : + 0.55
cm3/1000 strokes : + 1.0 Check tolerance	Rated speed rpm : 1680
cm3/1000S. : → 3.0  Spreed  Tolerance	rack travel mm : 4.00 Rated speed rpm : 1535 Tolerance 1/min : + 15
cm3/1000 strokes : 2.5 Check tolerance	
cm3/1000s. : 4.5	
(B) SETTING OF INJECTION PUMP	LOW IDLE
WITH GOVERNOR	Setting point w/out bumper spring
<u> </u>	Rated speed rpm : 350 rack travel mm : 8.10
GUIDE SLEEVE POSITION	Tolerance mm : +- 0.10
control lever	Rated speed rpm : 100
position degree : -3 Rated speed rpm : 800	CRT mm min. : > 16.00
Rack travel in mm: 0.50	Testing:
Tolerance mm : + 0.20	rack travel mm : 2.00 Rated speed rpm : 500
governor spring pre-tension +	Tolerance 1/min : +- 30
click setting x : 4.00	TORQUE CONTROL Rated speed rpm : 1400
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 11.95 Tolerance mm : + 0.05
Rated speed rpm : 1400 + Aneroid pressure +	Rated speed rpm : 900
hPa : 700 + Del. quantity +	rack travel mm : 13.05 Tolerance mm : +- 0.05
cm3/1000 strokes : 74.5 + Tolerance +	Rated speed rpm : 1050
cm3/1000 strokes : + 0.5 Check tolerance	rack travel mm : 12.80 Tolerance mm : + 0.10
cm3/1000s. : +- 2.5 Spreed	Rated speed rpm : 1260
Tolerance cm3/1000 strokes : 3.0	rack travel mm : 11.95 Tolerance mm : + 0.05
Check tolerance cm3/1000s. : 4.5	

# ANEROID/ALTITUDE COMPENSATOR TEST

### SEITING

Rated speed rpm : 500 Pressure hPa 700 rack travel mm : 13.15 : + 0.05 Tolerance mm

Rated speed rpm 500 Pressure hPa 11.35 rack travel mm : +- 0.05 Tolerance mm

### **MEASUREMENT**

Rated speed rpm : 500

: 340 Pressure hPa : 11.70 rack travel mm : + 0.10 Tolerance mm

Pressure hPa : 500 12.65 rack travel mm : Tolerance mm : +- 0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure 700 hPa 900 Rated speed rpm

Del. quantity

cm3/1000 strokes : 76.5 Tolerance

cm3/1000 strokes : +- 1.5 Check tolerance cm3/1000s. : +- 4.0

Aneroid pressure

hPa Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 50.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

: +- 2.5 cm3/1000s.

### STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		16.30
Tolerance mm	:	+-	0.20
Del. quantity			
cm3/1000 strokes	:		83.0
Tolerance			
cm3/1000 strokes	:	+-	5.0
Check tolerance			
cm3/1000s.	:	+	8.0

### LOW IDLE

Rated speed rpm Del. quantity	:	350
cm3/1000 strokes	:	11.0
cm3/1000 strokes Check tolerance	: +-	1.0
cm3/1000s.	: +-	3.0
Tolerance cm3/1000 strokes Check tolerance	:	2.5
cm3/1000s.	:	4.5

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 14.07.97

Test oil

: ISO 4113

Combination No. : F 002 A0Z 050

Injection pump

Pump designation: PES6A95D320/3RS2916

EP type number : F 002 A10 010

Governor

Governer design. : RSV425...1050A0C930R

Governer no. : F 002 A20 236

Cust. part No. : 328 3917

Customer-spec. information Customer : CUMMINS

motor Power KW

: 68T : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

2.0

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure bar

208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

K13

x inside diameter: 2.0 x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85 Tolerance mm : +- 0.05

Cneck

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5- 3- 6- 2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00

Tolerance : +- 0.10

Check

tolerance \*NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 11.25

Tolerance mm : +- 0.05

+	Aneroid pressure
Del. quantity cm3/1000 strokes : 98.2	hPa : 900 Del. quantity
+	cm3/1000 strokes : 98.2
Tolerance + 1.0 + 1.0	Tolerance cm3/1000 strokes : + 1.0
Check tolerance	Check tolerance cm3/1000s. : +- 3.0
cm3/1G00s. : +- 3.0	Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0 Check tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000s. : 6.0
Check tolerance cm3/1000s. : 6.0	CONTROL LEVER
Ţ	control lever
†	position degree : 100.0
Rated speed rpm : 425	tolerance degree : +- 4.0
Rack travel in mm: 5.05	RATED SPEED
Tolerance mm : + 0.10	rack travel mm : 10.25
Del. quantity	Rated speed rpm : 1115
cm3/1000 strokes : 18.5	Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0 +	rack travel mm : 4.50
Check tolerance	Rated speed rpm : 1170
cm3/1000s. : + 4.5	Tolerance 1/min : + 5
Spreed + Tolerance +	rack travel mm : 0.85
cm3/1000 strokes : 6.0	Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1275
cm3/1000s. : 8.0	
<del>}</del>	rack travel mm : 4.50
+	Rated speed rpm : 1170
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever	control lever
position degree : FREE	position degree : 80.0
Rated speed rpm : 800	tolerance degree : 4.0
Rack travel in mm : 0.50	Control Lever difference
Tolerance mm : + 0.20	Grad : 20.0
Total arte init	tolerance degree : +- 6.0
governor spring	
pre-tension +	Setting point w/out bumper spring
click setting x : 2.75	
+	Rated speed rpm : 425_
+	rack travel mm : 4.55
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
Rated speed rpm : 1050	Rated speed rpm : 100

		l Talanana
CRT man min.	: > 19.00	Tolerance cm3/1000 strokes : +- 2.0 Check tolerance
Testing:		cm3/1000s. : +- 4.0
Rated speed rpm rack travel mm Tolerance mm	: 425 : 5.05 : ← 0.10	Aneroid pressure hPa : - Rated speed rpm : 650
rack travel mm		+ Del. quantity
Rated speed rpm Tolerance 1/min	: 500 : <del></del> 30	+ cm3/1000 strokes : 82.9 + Tolerance
		+ cm3/1000 strokes : + 1.0 + Check tolerance
TORQUE CONTROL Rated speed rpm rock travel mm Tolerance mm	: 1050 : 11.25 : + 0.05	cm3/1000s. : +- 3.0
Rated speed rpm		STARTING FUEL DELIVERY
rack travel mm Tolerance mm	: 11.80	Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50 Del. quantity
ANEROID/ALTITUDE COMPENSATOR TEST		cm3/1000 strokes : 121.5
COMPENSATOR 1231		+ cm3/1000 strokes : ← 10.0
SETTING		+ Check tolerance + cm3/1000s. : ← 15.0
Rated speed rpm Pressure hPa		+
Rated speed rpm Pressure hPa	: 650	LOW IDLE
rack travel mm Tolerance mm	10.00	Rated speed rpm : 425
MEASUREMENT		Rack travel in mm : 5.05 Tolerance mm : +- 0.10
Rated speed rpm	: 650	Del. quantity cm3/1000 strokes : 18.5
	: 650	+ Tolerance
Pressure hPa rack travel mm	: 11.65	cm3/1000 strokes : +- 2.0 check tolerance
Tolerance mm		- cm3/1000s. : +- 4.5 - Spreed
Pressure hPa Pack travel mm	: 400 : 10.70	Tolerance cm3/1000 strokes : 6.0
Tolerance mm	· + 0.20	+ Check tolerance
		- cm3/1000s. : 8.0
FUEL DELIVERY CHA	RACTERISTICS	
Aneroid pressure		End of test specification sheet
hPa	: 900	
Rated speed rpm Del. quantity		† †
cm3/1000 strokes	: 106.2	+

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 06.01.97

Test oil

: ISO 4113

Combination No. : 0 403 466 174

Injection pump

Pump designation : PES6MW100/120RS1238

EP type number : 0 413 406 237

Governor

Soverner design. : RSV500...1100/1W0A398

Governer no. : 0 420 085 287

Cust. part No. : 3930122

Customer-spec, information

Customer : CDC

Motor

: 6 CT

Power KW

: 112.5

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

har

208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : <del>0-60-126-18</del>0-240

: -300

Start of delivery blocking

\*NW after s.o.d. : 7.50

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

15.00 travel

Difference \* CS : 2.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm	: 9.95	
Tolerance mm		FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes	: 112.0	Rated speed rpm : 1100 Aneroid pressure
Talanenaa		hPa : -
Tolerance cm3/1000 strokes	: ← 1.0 ‡	Del. quantity cm3/1000 strokes : 112.0
Check tolerance	Ţ	Tolerance cm3/1000 strokes : +- 1.0
cm3/1000s.	: + 4.0	Check tolerance cm3/1000s. : +- 4.0
Spreed	†	Spreed Tulerance
Tolerance	$\mathbf{I}$	cm3/1000 strokes : 4.0
cm3/1000 strokes	: 4.0	Check tolerance
		cm3/1000s. : 7.5
Check tolerance cm3/1000s.	: 7.5	
	+	CONTROL LEVER
Rated speed rpm	· 500 İ	control lever
acca apeca (pill	1	position degree : 102.0
Rack travel in mm		tolerance degree : +- 4.0
Tolerance mm	: <b>+</b> 0.10	-
Del. quantity	+	RATED SPEED
m3/1000 strokes	: 25.0	rack travel mm : 8.90
rolerance cm3/1000 strokes	· + 20 †	Rated speed rpm : 1165 Tolerance 1/min : +- 5
Check tolerance	· - 2.0	roterance it min : *- 3
cm3/1000s.	: + 4.5	rack travel mm : 6.00
Spreed	1	Rated speed rpm : 1230
Tolerance	+	Tolerance 1/min : +- 5
cm3/1000 strokes	: 3.5	
Check tolerance		rack travel mm : 1.00
cm3/1000s.	: 5.5	Tolerance mm : +- 0.70 Rated speed rpm : 1400
(B) SETTING OF IN	JECTION PUMP	rack travel mm : 6.00
WITH GOVERNOR	52011011 7 312	Rated speed rpm : 1230
	‡	Tolerance 1/min : +- 15
GUIDE SLEEVE POSI	TION	
	‡	LOW IDLE
control lever position d <del>e</del> gree	: - 3	
Rated speed rom		control lever
area opeca i piii	1	position degree : 88.0
Rack travel in mm Tolerance mm		tolerance degree : +- 4.0
· · · · · · · · · · · · · · · · · · ·	1	Control lever difference
governor spring	Ì	Grad : 14.0
ore-tension	+	tolerance degree : $\leftarrow$ 4.0
click setting x	: 3.50 +	

100 > 19.00 500 5.60
500
<b>-</b> 0.10
1100 9.95 ← 0.05
750 10.60 ⊷ 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	-
Rated speed rpm	:	750
Del. quantity		
cm3/1000 strokes	:	122.0
Tolerance		
cm3/1000 strokes	: +	- 2.0
Check tolerance		
cm3/1000s.	: +	- 5.0
Spreed		
Toterance		
cm3/1000 strokes	:	6.0
Check tolerance		
cm3/1000S.	:	9.0

# STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		20.50
Tolerance mm	:	+-	1.00
Del. quantity			
cm3/1000 strokes	:		177.0
Tolerance			
cm3/1000 strokes	:	+-	10.0
Check tolerance			
cm3/1000S.	:	+	13.0

LOW IDLE	
Rated speed rpm	: 500
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: ← 0.10 : 25.0 : ← 2.0 : ← 4.5

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 16.07.97 : ISO 4113

Combination No. : 9 400 030 732

Injection pump

Pump designation : PES6A95D320/3RS2881 EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1250A0c845R

Governer no. : 9 420 034 711

Cust. part No. : 3929407

Customer-spec. information

Customer : CDC Motor : 68T : 68T : 97.0 Motor Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

: **←** 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

Start of delivery blocking

\*NW after s.o.d. : 7.00

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 10.80 Tolerance mm : + 0.05

	+ Aneroid pressure
Del. quantity	→ hPa : -
cm3/1000 strokes : 88.5	bel. quantity
Tolerance	+ cm3/1000 strokes : 88.5 + Tolerance
cm3/1000 strokes : +- 1.0	+ cm3/1000 strokes : +- 1.0
CHEST TODO SET CITES 1	+ Check tolerance
Check tolerance	+ cm3/1000s. : +- 3.0
$cm3/1090s$ . : $\leftarrow$ 3.0	Spreed
	† Tolerance
Spreed	+ cm3/1000 strokes : 3.5
Tolerance	+ Check tolerance + cm3/1000s. : 6.0
cm3/1000 strokes : 3.5	Ţ (mb/ 10005 0.0
	1
Check tolerance	
cm3/1000s. : 6.0	+ CONTROL LEVER
	†
	† control lever † position degree : 117.0
Rated speed rpm : 475	tolerance degree : +- 4.0
and the second s	+
Rack travel in mm : 5.10	RATED SPEED
Tolerance mm : + 0.10	+ rack travel mm : 9.80
Del. quantity	+ Rated speed rpm : 1310
cm3/1000 strokes : 18.5 Tolerance	† Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	rack travel mm : 5.50
Check tolerance	Rated speed rpm : 1370
cm3/1000s. : +- 4.5	+ Tolerance 1/min : +- 5
Spreed	+
Tolerance	+ rack travel mm : 0.85
cm3/1000 strokes : 3.5	† Tolerance mm : +- 0.55
Check tolerance cm3/1000s. : 5.5	+ Rated speed rpm : 1500
. 5.5	rack travel mm : 5.50
	Rated speed rpm : 1370
(B) SETTING OF INJECTION PUMP	Tolerance 1/min : +- 15
WITH GOVERNOR	†
	†
GUIDE SLEEVE POSITION	LOW IDLE
	+
	+
control lever	t control lever
position degree : - 3	position degree : 91.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.50	T Control lever difference
Tolerance mm : + 0.20	+ Grad : 26.0
	tolerance degree : +- 4.0
governor_spring	† ·
pre-tension	Setting point w/out bumper spring
click setting x : 5.00	Rated speed rpm : 475
	rack travel mm : 4.60
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10
	+
Rated speed rpm : 1250	+ Rated speed rpm : 100

CRT mm min. : > 19.00 Testing: 475 Rated speed rpm rack travel mm : 5.10 TORQUE CONTROL Rated speed rpm : 1250 rack travel mm : 10.80 : **←** 0.05 Tolerance mm Rated speed rpm 800 : 11.20 rack travel mm : **←** 0.10 Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING 800 Rated speed rpm : Pressure hPa MEASUREMENT 800 Pressure hPa 10.80 rack travel mm : : +- 0.30 Tolerance mm FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa Rated speed rpm : 800 Del. quantity 94.5 cm3/1000 strokes : Tolerance cm3/1000 strokes :  $\leftarrow$  2.0 Check tolerance : +- 4.0 cm3/1000S.STARTING FUEL DELIVERY

100

: **←** 0.50

20.50

Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : +- 15.0

LOW IDLE

Rated speed rpm : 475 Rack travel in mm: 5.10 : + 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 18.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 3.5 Check tolerance 5.5 cm3/1000s.

End of test specification sheet

Rated speed rom

Tolerance mm
Del. quantity

rack travel mm :

cm3/1000 strokes : 120.5

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.97 Test oil : ISO 4113

Combination No. : 0 401 846 843

Injection pump

Pump designation : PE6P12OA72ORS3069 EP type number : 0 411 826 712

Governor

Governer design. : RQV300...1000PA501

: -4

Governer no. : 0 421 813 609

Cust. part No. :

Customer—spec. information Customer : IVECO-FIAT

Motor : 8210.22.371

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.55 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ← 0.50

Check

tolerance \*NW : +- 0.75

BASIC SETTING

Del. quantity cm3/1000 strokes : 206.0

Tolerance

cm3/1000 strokes : - 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

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†	- Check tolerance
	-  cm3/1000s. : +- 4.0
Rated speed rpm : 300	- Spreed
+	- Tolerance
Rack travel in mm :	- cm3/1000 strokes : 5.0
Tolerance mm : +	- Check tolerance
Del. quantity	- cm3/1000s. : 9.0
cm3/1000 strokes : 20.0	- 10000
Tolerance	
cm3/1000 strokes : + 3.0	
Check tolerance	CONTROL & FUED
	- CONTROL LEVER
Spreed	- control lever
Tolerance	- position degree : 120.0
cm3/1000 strokes : 8.0	- tolerance degree : +- 4.0
Check tolerance	•
cm3/1000s. : 12.0	- RATED SPEED
+	- rack travel mm : 11.50
	- Rated speed rpm : 1045
(B) SETTING OF INJECTION PUMP	- Tolerance 1/min : + 5
WITH GOVERNOR	- Check
	- speed 1/min : + 10
	Speed 17 iifiii
GUIDE SLEEVE TRAVEL	- rack travel mm : 4.00
GOTTE SECENE INVALE	
Dah	the second secon
Rated speed rpm : 1000	- Tolerance 1/min : +- 15
guide sleeve	- Check
travel mm : 8.10	- speed 1/min : + 20
Tolerance mm : + 0.15	<u>.</u>
+	- rack travel mm : 0.50
Rated speed rpm : 325	- Tolerance mm : + 0.50
•	20tod 1250
guide sleeve	- Rated speed rpm : 1250
guide sleeve = 1.70 = 1.70	- Rated speed rpm : 1250 -
travel mm : 1.70	- Rated speed rpm : 1230 - -
travel mm : 1.70	- kated speed rpm: : 1230 - -
travel mm : 1.70 - Tolerance mm : + 0.20 -	- Rated speed rpm : 1230 - - -
travel mm : 1.70 Tolerance mm : +- 0.20  Rated speed rpm : 450	- -
travel mm : 1.70 Tolerance mm : +- 0.20  Rated speed rpm : 450 guide sleeve	- Kated speed rpm : 7250 
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10	- -
travel mm : 1.70 Tolerance mm : +- 0.20  Rated speed rpm : 450 guide sleeve	- LOW IDLE
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20	LOW IDLE  control lever
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800	LOW IDLE  control lever  position degree : 67.0
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve	LOW IDLE  control lever
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90	LOW IDLE  control lever  position degree : 67.0  tolerance degree : +- 4.0
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve	LOW IDLE  control lever  position degree : 67.0
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20	LOW IDLE  control lever  position degree : 67.0  tolerance degree : +- 4.0  Setting point w/out bumper spring
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 5.90 Tolerance mm : + 0.20	LOW IDLE  control lever  position degree : 67.0  tolerance degree : +- 4.0
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve	LOW IDLE  control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 5.90 Tolerance mm : + 0.20	LOW IDLE  control lever  position degree : 67.0  tolerance degree : +- 4.0  Setting point w/out bumper spring
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve	LOW IDLE  control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50	LOW IDLE  control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 7.70
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50	LOW IDLE  control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100
Travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50	control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper srring Rated speed rpm : 100  CRT mm min. :> 7.70 Testing:
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50	LOW IDLE  control lever position degree : 67.0 tolerance degree : +- 4.0  Setting point w/out bumper soring  Rated speed rpm : 100  CRT mm min. :> 7.70  Testing:  Rated speed rpm : 300
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  FULL LOAD DELIVERY AT FULL LOAD STOP	control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper srring Rated speed rpm : 100  CRT mm min. :> 7.70  Testing: Rated speed rpm : 300 rack travel mm : 6.20
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000	LOW IDLE  control lever position degree : 67.0 tolerance degree : +- 4.0  Setting point w/out bumper soring  Rated speed rpm : 100  CRT mm min. :> 7.70  Testing:  Rated speed rpm : 300
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure	LOW IDLE  control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 7.70  Testing:  Rated speed rpm : 300 rack travel mm : 6.20 Tolerance mm : + 0.20
travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 700	control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper srring Rated speed rpm : 100  CRT mm min. :> 7.70  Testing: Rated speed rpm : 300 rack travel mm : 6.20
Travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide steeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide steeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide steeve travel mm : 11.50 Tolerance mm : + 0.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 700 Del. quantity	control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring Rated speed rpm : 100  CRT mm min. :> 7.70  Testing: Rated speed rpm : 300 rack travel mm : 6.20 Tolerance mm : + 0.20  rack travel mm : 2.00
Travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 206.0	LOW IDLE  control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 100  CRT mm min. :> 7.70  Testing:  Rated speed rpm : 300 rack travel mm : 6.20 Tolerance mm : + 0.20
Travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50 Tolerance mm : 0.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 206.0 Tolerance	control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring Rated speed rpm : 100  CRT mm min. :> 7.70  Testing: Rated speed rpm : 300 rack travel mm : 6.20 Tolerance mm : + 0.20  rack travel mm : 2.00
Travel mm : 1.70 Tolerance mm : + 0.20  Rated speed rpm : 450 guide sleeve travel mm : 3.10 Tolerance mm : + 0.20  Rated speed rpm : 800 guide sleeve travel mm : 5.90 Tolerance mm : + 0.20  Rated speed rpm : 1300 guide sleeve travel mm : 11.50 Tolerance mm : + 0.50  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000 Aneroid pressure hPa : 700 Del. quantity cm3/1000 strokes : 206.0	control lever position degree : 67.0 tolerance degree : + 4.0  Setting point w/out bumper spring Rated speed rpm : 100  CRT mm min. :> 7.70  Testing: Rated speed rpm : 300 rack travel mm : 6.20 Tolerance mm : + 0.20  rack travel mm : 2.00

# ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm	:	500
Pressure hPa	:	700
rack travel mm	:	12.55
Tolerance mm	: +	- 0.05

Rated speed rpm	:	500
Pressure hPa		-
rack travel mm	•	9.80
Tolerance mm	: +	- 0.10

# MEASUREMENT

Rated	speed	rpm	:	500
-------	-------	-----	---	-----

Pressure hPa	:		230
rack travel mm	:		10.85
Tolerance mm	:	+	0.15

Pressure hPa	:		280
rack travel mm	:		11.85
Tolerance mm	:	+-	0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa	:	700
Rated speed rpm	:	500
Del. quantity cm3/1000 strokes	:	218.0
Tolerance cm3/1000 strokes	: +	- 3.0
Check tolerance cm3/1000s.	: +	- 6.0

Aneroid pressure			
hPa	:		-
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		132.0
Tolerance			
cm3/1000 strokes	:	+	1.0
Check tolerance			
cm3/1000s.	:	+-	4.0

STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity cm3/1000 strokes	:	200.0
Tolerance cm3/1000 strokes	: +	- 15.0
Check tolerance cm3/1000s.	: +	- 19.0

# LOW IDLE

Rated speed rpm	:	300
Rack travel in mm Tolerance mm Del. quantity	: +-	6.20
cm3/1000 strokes	:	20.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000S. Spreed	: +-	6.0
Tolerance cm3/1000 strokes Check tolerance	:	8.0
cm3/1000s.	•	12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.07.97 : ISO 4113

Combination No. : 0 402 076 802B

Injection pump

Pump designation : PES6P120A1320/5RS337

EP type number : 0 412 026 794

Governor

Governer design. : RSV350...1050P8A643

Governer no. : 0 421 833 555

Cust. part No. : 1385930 - Version B

Customer-spec. information Customer : SCANIA

Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration

damoer

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : Tolerance bar : ← 0.1

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45 Tolerance mm : +- 0.05

Check

: **←** 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: **←** 0.50 Tolerance

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.30

Check

tolerance \*NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

+	
Rack travel in mm: 15.25	
Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 225.0	Rated speed rpm : 700 Aneroid pressure hPa : 1500
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 225.0 Tolerance
Check tolerance cm3/1000s. : + 7.0	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 7.0
Spreed	Spreed Tolerance
Tolerance cm3/1000 strokes : 8.0	cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0
Check tolerance cm3/1000S. : 12.0	
	CONTROL LEVER
Rated speed rpm : 350	control lever position degree : 49.0
Rack travel in mm: 5.10 Tolerance mm: + 0.10	tolerance degree : +- 4.0
Del. quantity cm3/1000 strokes : 18.0 Tolerance	control lever position degree : 99.0 tolerance degree : +- 4.0
cm3/1000 strokes : + 3.0 + Check tolerance +	RATED SPEED
cm3/1000s. : + 6.0 Spreed	rack travel mm : 14.20 Rated speed rpm : 945
Tolerance + cm3/1000 strokes : 4.0 + Check tolerance +	Tolerance 1/min : +- 5 Check speed 1/min : +- 10
cm3/1000s. : 8.0	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1045 Tolerance 1/min : +- 15 Check
‡	speed 1/min : + 20
GUIDE SLEEVE POSITION	rack travel mm : 0.85 Tolerance mm : → 0.55 Rated speed rpm : 1200
control lever position degree : - 3 Rated speed rpm : 800	rack travel mm : 4.00 Rated speed rpm : 1065 Tolerance 1/min : + 15 Check
Rack travel in mm: 0.50 Tolerance mm: + 0.20	speed 1/min : +- 20
governor spring pre-tension tick setting x : 5.00	LOW IDLE
T	COM INCE

control lever

position degree : 73.0 tolerance degree : + 4.0

control lever

position degree : 23.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350 rack travel mm : 4.60 Tolarance mm : ← 0.10

Testing:

Rated speed rpm : 350 rack travel mm : 5.10 Tolerance mm : + 0.10

TORQUE CONTROL

Rated speed rpm : 700 rack travel nm : 15.25 Tolerance mm : + 0.05

Rated speed rpm : 900 rack travel mm : 15.25 Tolerance mm : 4- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.25
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : rack travel mm : 13.10
Tolerance mm : + 0.20

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 450 rack travel mm : 13.60 Tolerance mm : + 0.20

Pressure hPa : 660 rack travel mm : 14.65 Tolerance mm : + 0.05 FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 900

Del. quantity

cm3/1000 strokes : 216.0

Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 183.0

Tolerance

cm3/1000 strokes : + 1.0 Check tolerance

cm3/1060s. : -- 5.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 18.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +- 6.0

Spreed Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 08.07.97

Test oil

: ISO 4113

Combination No.

: 0 402 076 8020

Injection pump

Pump designation: PES6P120A1320/5RS337

EP type number : 0 412 026 794

Governor

Governer design. : RSV350...1050P8A643

Governer no.

: 0 421 833 555

Cust. part No. : 1385930 - Version C

Customer-spec. information

Customer

: SCANIA

Motor

: DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line

: 4.2

Vibration

damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C

Tolerance °C

2.0

Overflow valve : 1 417 413 025

Inlet press, bar :

2.5

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 104

Opening pressure

har

251.5

Tolerance bar

: +- 1.5

K28

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter:

2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

Prestroke mm

: +- 0.05 Tolerance mm

Check

: + 0.10tolerance mm

Rack travel in mm: 10.50

: +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

: **←** 0.75 tolerance \*NW

Start of delivery mark

Tolerance :  $\leftarrow$  0.30

Check

tolerance 'NW : +- 0.75

: 1 Barrel no.

BASIC SETTING

Rated speed rpm :

700

- A	†
Rack travel in mm : 15.35 Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOR
Del. quantity cm3/1000 strokes : 226.0	Rated speed rpm : 700 Aneroid pressure
	+ hPa : 1500
Tolerance	+ Del. quantity
cm3/1000 strokes : + 1.0	+ cm3/1000 strokes : 226.0
	Tolerance
Check tolerance	- cm3/1000 strokes : +- 1.0
cm3/1000s. : $\leftarrow$ 7.0	+ Check tolerance + cm3/1000s. : +- 7.0
Canad	+ cm3/1000s. : +- 7.0 + Spreed
Spreed	Tolerance
Tolerance	- cm3/1000 strokes : 8.0
cm3/1000 strokes : 8.0	Check tolerance
5.00 St. 5.00	+ cm3/1000s. : 12.0
Check tolerance	
cm3/1000s. : 12.0	+
	+ CONTROL LEVER
Rated speed rpm : 350	T control lever
Rated Speed (pill : 550	position degree : 54.0
Rack travel in mm : 5.10	tolerance degree : + 4.0
Tolerance mm : - 0.10	total and adjited
Del. quantity	↓ control lever
cm3/1000 strokes : 18.0	position degree : 104.0
Tolerance	tolerance degree : + 4.0
cm3/1000 strokes : +- 3.0	+
Check tolerance	+ RATED SPEED
cm3/1000s. : +- 6.0	rack travel mm : 14.30
Spreed	+ Rated speed rpm : 1095
Tolerance	+ Tolerance 1/min : +- 5
cm3/1000 strokes : 4.0	+ Check
Check tolerance	+ speed 1/min : +- 10
cm3/1000s. : 8.0	†
	+ rack travel mm : 4.00
	+ Rated speed rpm : 1195
(B) SETTING OF INJECTION PUMP	Tolerance 1/min : + 15
WITH GOVERNOR	+ Check + speed 1/min : +- 20
	T speed Milli
	- rack travel mm : 0.85
GUIDE SLEEVE POSITION	+ Tolerance mm : +- 0.55
	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1350
	+
control lever	+ rack travel mm : 4.00
position degree : - 3	Rated speed rpm : 1225
Rated speed rpm : 800	+ Toleranse 1/min : + 15
	+ Check
Rack travel in mm: 0.50	speed 1/min : +- 20
Tolerance mm : + 0.20	†
governor spring	Ī
pre-tension	
click setting x : 5.75	LOW IDLE
etion proting to the state	+
	+
	·

control lever position degree tolerance degree	: 73.0 : + 4.0
control lever position degree tolerance degree	: 23.0 : + 4.0
Setting point w/o	out bumper spring
Rated speed rpm rack travel mm Tolerance mm	: 350 : 4.60 : ← 0.10
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.10 : + 0.10
TORQUE CONTROL Rated speed rpm rack travel mma Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 15.35 : + 0.10
ANERGID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 15.35 : +- 0.05
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: : 13.10 : ← 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 450 : 13.60 : ← 0.20
Pressure hPa rack travel mm	: 660 : 14.65 : ← 0.05

Aneroid pressure hPa	: 1500
Rated speed rpm Del. quantity	: 1050
cm3/1000 strokes Tolerance	: 209.0
cm3/1000 strokes Check tolerance	: +- 4.0
cm3/1000s.	: +- 6.0
Aneroid pressure	
hPa Rated speed rpm	500
Del. quantity cm3/1000 strokes	: 183.0
Tolerance cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000s.	: +- 5.0
LOW IDLE	
LOW IDLE Rated speed rpm	: 350
Rated speed rpm Rack travel in mm	: 5.10
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity	: 5.10 : ← 0.10
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance	: ← 5.10 : ← 0.10 : 18.0
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: ← 5.10 : ← 0.10 : 18.0
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	:
Rated speed rpm Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	:

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.97 Test oil : ISO 4113

Combination No. : 0 402 076 8020

Injection pump

Pump designation : PES6P120A1320/5RS337

: 3

EP type number : 0 412 026 794

Governor

Governer design. : RSV350...1050P8A643

Governer no. : 0 421 833 555

Cust. part No. : 1385930 - Version D

Customer—spec. information Customer : SCANIA

Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : ← 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45
Tolerance mm : +- 0.05
Check

cneck

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance \*NV : + 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.30

Check

tolerance \*NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

. ,,,,

Rack travel in mm	: 15.15	· · · · · · · · · · · · · · · · · · ·	
Tolerance mm	: ← 0.05	FULL LOAD DELIVER	RY AT FULL LOAD STOP
Del. quantity	+	Rated speed rpm	: 700
cm3/1000 strokes	: 221.0	Aneroid pressure	: 1500
Tolerance	<u> </u>	hPa Del. quantity	: 1500
cm3/1000 strokes	: ← 1.0 <b>+</b>	cm3/1000 strokes	: 221.0
		Tolerance	4.0
Check tolerance cm3/1000s.	: ← 7.0 ‡	cm3/1000 strokes Check tolerance	: <del>+-</del> 1.0
(1107 10000)		cm3/1000s.	: +- 7.0
Spreed	+	Spreed	
Tolerance	İ	Tolerance cm3/1000 strokes	: 8.0
cm3/1000 strokes	: 8.0	Check tolerance	. 0.0
		cm3/1000s.	: 12.0
Check tolerance cm3/1000s.	: 12.0		
cm3/10005.	: 12.0	<del></del>	
		CONTROL LEVER	
Rated speed rpm	: 350	control lever	
	+	position degree	
Rack travel in mm	: 5.10 : + 0.10	tolerance degree	: +- 4.0
Tolerance mm Del. quantity	: - 0.10	control lever	
cm3/1000 strokes	: 18.0	position degree	
Tolerance	+	tolerance degree	: <b>←</b> 4.0
cm3/1000 strokes Check tolerance	: + 3.0	RATED SPEED	
cm3/1000s.	: + 6.9	rack travel mm	: 13.10
Spreed	+	Rated speed rpm	
Tolerance cm3/1000 strokes	: 4.0	Tolerance 1/min Check	: <del></del> 5
Check tolerance	· 4.0	speed 1/min	: +- 10
cm3/1000s.	: 8.0	· ·	
	+	rack travel mm	: 4.00 : 1185
(B) SETTING OF IN	JECTTON PLUMP	Rated speed rpm Tolerance 1/min	
WITH GOVERNOR	+	Check	•
	+	speed 1/min	: +- 20
	İ	rack travel mm	: 0.85
GUIDE SLEEVE POSIT	TION	Tolerance mm	
	+	Rated speed rpm	: 1350
control lever	<u>†</u>	rack travel mm	: 4.00
position degree	: - 3	Rated speed rpm	
Rated speed rpm	: 800	Tolerance 1/min	: +- 15
Rack travel in mm	. 0.50	Check speed 1/min	: +- 20
Tolerance mm		speed mant	
	+		
governor spring pre-tension	1		
click setting x	: 6.00	LOW IDLE	
	+		
	+		

control position tolerand	lever degree e degree	: +-	73.0 4.0	) 	
control position tolerand	lever degree e degree	: +-	23.0 4.0		
Setting	point w/c	out bu	mper s	pring	
Rated sp rack tra Tolerand	eed rom vel mm e mm	: +-	350 4.60 0.10		
Testing:					
	eed rpm vel mm e mm	: +-	350 5.10 0.10		
TORQUE C Rated sp rack tra Tolerand	eed rpm vel mm	: +-	700 15.15 0.05		
	eed rpm vel mm e mm	:	1050 14.15 0.05		
	eed rpm vel mm e mm	: +-	925 14.60 0.10		
	ALTITUDE TOR TEST				
SETTING					
Rated sp Pressure rack tra Toleranc	vel mm	: '	500 1500 15.15 0.05		
Rated sp Pressure rack tra Toleranc	hPa velmm	: +-	500 12.10 0.20		
MEASUREM	ENT				
Rated sp	eed rpm	:	5 <b>0</b> 0		
Pressure rack tra Tolerance	vel mm	: +	510 13.10 0.20		

Pressure hPa : 780 rack travel mm : 14.50 Tolerance mm : + 0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 1500 Rated speed rpm : 1050 Del. quantity cm3/1000 strokes : 189.0 Tolerance cm3/1000 strokes :  $\leftarrow$  4.0 Check tolerance cm3/1000s. : +- 6.0 Aneroid pressure hPa Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 150.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0 LOW IDLE Rated speed rpm : 350 Rack travel in mm: 5.10 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +-6.0 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 26,10,95 Edition Test oil : ISO 4113

Combination No. : 0 402 610 802

Injection pump

Pump designation : PE12P12OA500LS7866 EP type number : 0 412 620 836

Governor

Governer design. : Governer no.

Cust. part No. : 0240742902

Customer-spec. information : MTU Customer

: 12V183-02 Motor

TEST BENCH REQUIREMENTS

Inlet line : 3.1,3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity

min. L/h 110 Tolerance 1/h : +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar

Test Lines : 1 680 750 075 Outside diameter : 8.0

3.0 x inside diameter:

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05

Check

: + 0.10tolerance mm

Rack travel in mm: 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 12- 1- 5- 9- 8

: - 3- 4- 11- 10 : - 2- 6- 7

Phasing : 0-45-60-105-120

: -165-180-225-240 : -285-300-345

Tolerance : + 0.50

Check

: **←** 0.75 tolerance \*NW

Start of delivery mark

Barrel no. : 12

BASIC SETTING

750 Rated speed rpm :

Rack travel in mm: 10.45 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 184.0

Tolerance cm3/1000 strokes	: +- 1.0			
Check tolerance cm3/1000s.	: +- 4.0			
Spreed	**************************************			
Tolerance cm3/1000 strokes	: 8.0			
Check tolerance cm3/1000s.	: 11.0			
Del. quantity cm3/1000 strokes Tolerance	: 18.0			
cm3/1000 strokes	: <b>←</b> 3.0			
Check tolerance				
cm3/1000s. Spreed	: + 6.1			
Tolerance				
cm3/1000 strokes	: 10.0			
Check tolerance cm3/1000s.	: 14.0			
(B) SETTING OF INJECTION PUMP WITH GOVERNOR				
FULL LOAD DELIVER	Y AT FULL LOAD STOP			
Aneroid pressure hPa	: -			
Del. quantity	40/ 0			
cm3/1000 strokes Tolerance	: 184.0			
cm3/1000 strokes	: <del>-</del> 1.0			
Check tolerance				
cm3/1000s. Spreed	: +- 4.0			
Tolerance				
cm3/1000 strokes	: 8.0			
Check tolerance cm3/1000s.	: 11.0			
TORQUE CONTROL Rated speed rpm rack travel mm	: 750 : 10.45			

LOW IDLE			
Del. quantity			
cm3/1000 strokes	:	18.0	
Tolerance cm3/1000 strokes		3.0	
Check tolerance	• '	3.0	
cm3/1000s.	: +-	6.1	
Spreed Tolerance			
T	:	10.0	
Check tolerance			
cm3/1000s.	:	14.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.07.97 Test oil : ISO 4113

Combination No. : 0 402 618 806

Injection pump

Pump designation : PE8P120A500/5RS7377

EP type number : 0 412 628 904

Governor

Governer design. : Governer no. :

Cust. part No. : 1 2277 429

Customer-spec. information

Customer : MWM

Motor : TBD 616-V16

Power KW : 864.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 075

Outside diameter: 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.60 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 13.00 Tolerance mm : + 0.50

Firing order : 1-2-7-8-3-4-

: 5- 6

Phasing : 0-30-45-75-90-120

: -315-345

Tolerance : + 0.50

Check

tolerance "NW : +- 0.75

Start of delivery mark

Tolerance : + 0.50

Check

tolerance "NW : +- 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 285.0

Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000S.	: 9.0
Rated speed rpm Del. quantity	: 325
cm3/1000 strokes	: 30.0
Tolerance cm3/1000 strokes	: <b>←</b> 3.0
Check tolerance cm3/1000s.	: ← 6.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 6.0
cm3/1000s.	: 10.0
(B) SETTING OF IN	HECTION DINE
WITH GOVERNOR	MECITON FORM
FULL LOAD DELIVER	RY AT FULL LOAD STOP
Rated speed rpm	: 750
Aneroid pressure	. 750
hPa Del. quantity	: -
cm3/1000 strokes	: 285.0
Tolerance cm3/1000 strokes	: <del>+</del> 1.0
Check tolerance cm3/1000s.	: <del></del> 4.0
Spreed	• • • • • • • • • • • • • • • • • • • •
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 9.0
TORQUE CONTROL Rated speed rpm	: 750
rack travel mm	: 12.35
Tolerance mm	: ← 0.05

LOW IDLE Rated speed rpm	•	325	
Del. quantity	•	767	
cm3/1000 strokes	:	30.0	
Tolerance			
cm3/1000 strokes	: +	3.0	
Check tolerance cm3/1000s.	• +-	6.0	
Spreed	• '	0.0	
Tolerance			
cm3/1000 strokes	:	6.0	
Check tolerance		40.0	
cm3/1000s.	:	10.0	

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.07.97 Test oil : ISO 4113

Combination No. : 0 402 618 807

Injection pump

Pump designation : PE8P12OA500/5RS7378 EP type number : 0 412 628 905

Sovernor

Governer design. : Governer no. :

Cust. part No. : 1 2277 428

Customer-spec. information Customer : MWM

Motor : TBD 616-V16

Power KW : 864.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. \*C : 40
Tolerance \*C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.60 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 13.00 Tolerance mm : + 0.50

Firing order : 1-2-5-6-3-4

: - 7- 8

Phasing : 0-30-45-75-270-300

: -315-345

Tolerance  $: \leftarrow 0.50$ 

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.35
Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 285.0

Tolerance cm3/1000 strokes	: <b>←</b> 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed	
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 9.0
Rated speed rpm Del. quantity	: 325
cm3/1000 strokes Tolerance	: 30.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s. Spreed	: +- 6.0
Tolerance cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 10.0
(B) SETTING OF IN WITH GOVERNOR	
	Y AT FULL LOAD STOP : 750
Rated speed rpm Aneroid pressure hPa	
Del. quantity cm3/1000 strokes	: - : 285.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: +- 4.0
Spreed Tolerance	. 0
cm3/1000 strokes Check tolerance	: 6.0 : 9.0
cm3/1000s.	; <del>9.</del> U
TORQUE CONTROL Rated speed rpm	

LOW IDLE	
Rated speed rpm Del. quantity	: 325
cm3/1000 strokes Tolerance	: 30.0
cm3/1000 strokes	: <b>←</b> 3.0
Check tolerance cm3/1000s. Spreed	: ← 6.0
Tolerance	
cm3/1000 strokes Check tolerance	: 6.0
cm3/1000s.	: 10.0

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

: 24.04.97 Edition Test oil : ISO 4113

Combination No. : 0 402 640 830

Injection pump

Pump designation : PE12P120A520LS7824

: -5

EP type number : 0 412 620 828

Governor

Governer design. : RQV300...1150PA902

: -4

: 0 421 813 870 Governer no.

Cust. part No. : 3-7153

Customer-spec. information

Customer : MAN : D2842LYE Motor

Power KW : 735.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40

Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity

: 120 min. L/h

Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 Dar

: + 1.5 Tolerance bar

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm 4.55 Tolerance mm : +- 0.05

Check

: **←** 0.10 tolerance mm

Rack travel in mm : 10.50

Tolerance mm : +- 1.50

: 12-1A- 5- 9A- 8 Firing order

= 3A - 4 - 11A - 10

: - 2A- 6

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345

Tolerance : ← 0.30

Check

: **←** 0.75 tolerance \*NW

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance "NW : **←** 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

	• • •
<u> </u>	guide sleeve
Rack travel in mm: 13.75	travel mm : 13.50
Tolerance mm : + 0.05	Tolerance mm : +- 0.50
Del. quantity	CUTAC OLECUE DOCUTTON
cm3/1000 strokes : 305.0	GUIDE SLEEVE POSITION
Talanana	
Tolerance +	control lever
cm3/1000 strokes : + 1.0 +	position degree : - 1
Check tolerance	Rated speed rpm : 1260
cm3/1000s. : + 4.0	raced speed i piii . 1200
T 4.5	Rack travel in mm : 12.70
Spreed	Tolerance mm : + 1.30
opi cea	rocer arise than
Tolerance	
cm3/1000 strokes : 5.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance	Rated speed rpm : 1150
cm3/1000s. : 9.0 +	Aneroid pressure
+	hPa : 1300
+	Del. quantity
+	cm3/1000 strokes : 305.0
Rated speed rpm : 300 +	Tolerance
†	cm3/1000 strokes : + 1.0
Rack travel in mm: 7.30 +	Check tolerance
Tolerance mm : + 0.10 +	cm3/1000s. : +- 4.0
Del. quantity +	Spreed
cm3/1000 strokes : 56.0 +	Tolerance
Tolerance +	cm3/1000 strokes : 5.0
cm3/1000 strokes : + 4.0 +	Check tolerance cm3/1000s. : 9.0
Ť	cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	
WITH GOVENION	CONTROL LEVER
<u> </u>	ONTHOE CEVEN
GUIDE SLEEVE TRAVEL	control lever
	position degree : 122.0
Rated speed rpm : 1150	tolerance degree : +- 4.0
guide sleeve	-
travel mm : 9.60 +	RATED SPEED
Tolerance mm : + 0.10 +	rack travel mm : 12.70
	Rated speed rpm : 1195
Rated speed rpm : 300 +	Tolerance 1/min : +- 5
guide sleeve +	
travel mm : 1.40 +	rack travel mm : 4.00
Tolerance mm : ← 0.20 +	Rated speed rpm : 1305 Tolerance 1/min : +- 15
Rated speed rpm : 750	Tolerance 1/min : +- 15
1	rack travel mm : 0.50
guide sleeve + travel mm : 5.80 +	Tolerance mm : +~ 0.50
Tolerance mm : + 0.20 +	Rated speed rpm : 1400
T . O.E.	nacca speca (pin 1 1700
Rated speed rpm : 450	
guide steeve	
travel mm : 3.20	
Tolerance mm : + 0.30 +	LOW IDLE
+	
Rated speed rpm : 1400	
• • • • • • • • • • • • • • • • • • • •	

control lever 85.0 position degree : tolerance degree : + 4.0 Setting point w/out bumper spring Rated speed rpm : 100 CRT mm min. : > 8.90 Testing: 300 Rated speed rpm 7,30 rack travel mm Tolerance mm : +- 0.10 2.00 rack travel mm Rated speed rpm 480 Tolerance 1/min TORQUE CONTROL Rated speed rpm 1150 13.75 rack travel mm : +- 0.05 Tolerance ma 500 Rated speed rpm : 6.90 rack travel mm : + 0.10Tolerance ma 500 Rated speed rpm 8.50 rack travel mm : +- 0.10 Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING 500 Rated speed rpm Pressure hPa 1300 13.75 rack travel mm Tolerance mm : +- 0.05 Rated speed rpm 500 Pressure hPa 9.20 rack travel mm : **←** 0.10 Tolerance mm **MEASUREMENT** 500 Rated speed rpm 470 Pressure hPa : rack travel mm 12.10

: **←** 0.20

rack travel mm Tolerance mm	:	+-	100 9.45 0.05	
Start interlock				
Rated speed rpm Rated speed rpm	:	> <	100 220	
Check speed 1/min Check	:	>	80	
speed 1/min	:	<	240	
FUEL DELIVERY CHA	RA	CTER	ISTICS	
Delivery for shu (refer to cam se				es
Arbitrary delive				rd plunge
barrel assemblie			5 (4.166	
• •	-			
Aneroid pressure	_		_	
hPa Rated speed rpm	:		500	
Del. quantity	•		200	
cm3/1000 strokes			0.1	
Delivery for shu (refer to cam se Arbitrary delive barrel assemblie	que	ence		
parret assemblie	5.			
Aneroid pressure				
nPa	:			
hPa Rated speed rpm	:		- 500	
hPa Rated speed rpm Del. quantity	:			
hPa Rated speed rpm Del. quantity cm3/1000 strokes	•		500 135.0	
hPa Rated speed rpm Del. quantity		<del></del>		
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes		+	135.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance		+-	135.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Aneroid pressure hPa	:		135.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes  Aneroid pressure hPa Rated speed rpm Del. quantity	:		135.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	:		135.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:		135.0 10.0 500 150.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:		135.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:		135.0 10.0 500 150.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	:		135.0 10.0 500 150.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	:		135.0 10.0 500 150.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	:		135.0 10.0 500 150.0	
nPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Thereoid pressure nPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Theck tolerance cm3/1000s. Topreed Tolerance	•		135.0 10.0 500 150.0 1.0 4.0	

12.0

cm3/1000S.

Tolerance mm

## STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 19.30 Tolerance mm : + 1.70

Del. quantity

cm3/1000 strokes : 110.0

Tolerance

cm3/1000 strokes : + 10.0

# LOW IDLE

Delivery for standard plunger/barrel assemblies.

Zero delivery for shutoff assemblies (refer to cam sequence).

Rated speed rpm : 300

Rack travel in mm : 7.30 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 56.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  4.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.07.97 Test oil : ISO 4113

Combination No. : 0 402 648 603A

Injection pump

Pump designation : PE8P120A720LS7427T EP type number : 0 412 628 919

Governor

Governer design. : RQ750PA1227-1 Governer no. : 0 421 801 812

Cust. part No. : 1391886 - Version A

Customer—spec. information Customer : SCANIA

Motor : DSI(C)14...A,M

TEST BENCH REQUIREMENTS

Inlet line : 4.1

Vibration damper

(RoBo diaphragm) : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-2A- 7- 3A- 4

: - 5A- 6

Phasing : 0-45-90-135-180

: -225-270-315 Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 15.05

Tolerance mm : + 0.05

N. 1	- guide steeve
Del. quantity cm3/1000 strokes : 271.0	- travel mm : 11.50 - Tolerance mm : + 0.50
Tolerance cm3/1000 strokes : +- 1.0	- FULL LOAD DELIVERY AT FULL LOAD STOP
Check tolerance cm3/1000s. : +- 8.0	- - Rated speed rpm : 850 - Aneroid pressure
	- hPa : 1500
Spreed	- Del. quantity - cm3/1000 strokes : 271.0
Tolerance cm3/1000 strokes : 8.0	- Tolerance - cm3/1000 strokes : +- 1.0 - Check tolerance
Check tolerance cm3/1000s. : 12.0	- cm3/1000s. : +- 8.0 - Spreed
	- Tolerance - cm3/1000 strokes : 8.0
1	- Check tolerance - cm3/1000s. : 12.0
Rack travel in mm: 6.50	
Tolerance mm : + 0.10 Del. quantity	•
cm3/1000 strokes : 38.0	- CONTROL LEVER
cm3/1000 strokes : + 4.0 Check tolerance	- control lever - position degree : 30.0
cm3/1000s. : +- 6.0	tolerance degree : +- 4.0
Tolerance	- control lever
cm3/1000 strokes : 5.0	position degree : 92.0
Check tolerance	tolerance degree : +- 4.0
cm3/1000s. : 9.0	toterance degree
<del>-</del>	- ASSEMBLY GOVERNOR SETTING
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	- Rated speed rpm : 900 - rack travel mm : 15.50
GUIDE SLEEVE TRAVEL	Rated speed rpm : 940
250	Tolerance 1/min : + 4
Rated speed rpm : 759 guide sleeve +	rack travel mm : 4.00
travel mm : 4.89	rack travel mm : 0.50
Tolerance mm : + 0.15 +	Tolerance mm : + 0.50
†	Rated speed rpm : 1000
Rated speed rpm : 480	•
Tolerance mm : + 0.25	0.4
Datad around are	Rated speed rpm : 901 rack travel mm : 15.50
Rated speed rpm : 840	rack travet mm : 15.50
Tolerance mm : ← 0.25	Rated speed rpm : 941
Rated speed rpm : 797 + guide sleeve + +	Tolerance 1/min : +- 4 rack travel mm : 4.00
travel mm : 10.00	•
Tolerance mm : + 0.25	rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm : 850	Rated speed rpm : 1000
Rated speed rpm : 850	начен эреен грт в 1000

		+	SETTING	
Rated speed rpm rack travel mm		‡	Rated speed rpm Pressure hPa	: 500 : 1500
Rated speed rpm Tolerance 1/min rack travel mm	: + 4	<u> </u>	rack travel mm Tolerance mm	: 15.05 : + 0.05
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : ← 0.50	+++++++++++++++++++++++++++++++++++++++	Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 12.50 : ← 0.20
Rated speed rpm	: 903	+	MEASUREMENT	
rack travel mm	: 15.50	‡	Rated speed rpm	: 500
Rated speed rpm Tolerance 1/min rack travel mm	: 943 : + 4 : 4.00	<del> </del>	Pressure hPa rack travel mm Tolerance mm	: 350 : 13.20 : ← 0.20
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : ← 0.50 : 1000	+	Pressure hPa rack travel mm Tolerance mm	: 590 : 14.55 : ← 0.05
Rated speed rpm rack travel mm	<del>_</del>	‡	FUEL DELIVERY CHA	RACTERISTICS
Rated speed rpm		+		
Tolerance 1/min rack travel mm		Ŧ	Aneroid pressure	: -
rack travel mm	: 0.50 : + 0.50	‡	Rated speed rpm Del. quantity cm3/1000 strokes	
Tolerance mma Rated speed rpm	: 1000	Ī	Tolerance cm3/1000 strokes	
Rated speed rpm		+	Check tolerance cm3/1000s.	: <del>+-</del> 7.0
rack travel mm	: 15.50	‡		
Rated speed rpm Tolerance 1/min rack travel mm	: 945 : + 4 : 4.00	+	STARTING FUEL DEL	IVERY
rack travel mm	: 0.50 : +- 0.50	+	Rated speed rpm rack travel mm Tolerance mm	: 100 : 12.50 : + 0.20
Rated speed rpm	: 1000	+	Del. quantity cm3/1000 strokes Tolerance	: 180.0
TODOLE CONTROL		<del></del> <u>+</u>	cm3/1000 strokes Check tolerance	: +- 20.0
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 850 : 15.05 : + 0.05	<b>T</b>	cm3/1000s.	: + 24.0
ANEROID/ALTITUDE COMPENSATOR TEST		<del></del> ‡		

Note remarks

Refer to Service Info for test and adjustment instructions.

See microcard(s) W400/...

Edition : 16.07.97 Test oil : ISO 4113

Combination No. : 0 402 648 785

Injection pump

Pump designation : PE8P120A320LS7844 EP type number : 0 412 628 860

Governor

Governer design. : RQV350...1050PA1318

Governer no. : 0 421 814 185

Cust. part No. : 0270746302

Customer-spec. information

Customer : MB-NFZ : 0M442 LA Motor : 370.0

Power KW

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C 2.0

: 1 417 413 047 Overflow valve

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. L/h : 130 Tolerance l/h:  $\leftarrow$  20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 5.05 : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

: +- 0.50

: + - 0.75

Tolerance

Check

Start of delivery mark

tolerance \*NW

: + 0.10Tolerance

Check

: + 0.75 tolerance \*NW

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm: 15.30 Tolerance mn:  $\leftarrow 0.05$ 

L20

	+ guide sleeve
Del. quantity	+ travel mm : 3.62
cm3/1000 strakes : 272.0	+ Tolerance mm : + 0.25
	+
Tolerance	+ Rated speed rpm : 1204
cm3/1000 strokes : +- 1.0	+ guide sleeve
	+ travel mm : 10.00
Check tolerance	+ Tolerance mm : + 0.25
$cm3/1000s.$ : $\leftarrow$ 4.0	+
	+ Rated speed rpm : 1300
Spreed	+ guide sleeve
	+ travel mm : 11.50
Tolerance	+ Tolerance mm : + 0.50
cm3/1000 strokes : 5.0	+
Check tolerance	+ GUIDE SLEEVE POSITION
cm3/1000s. : 9.0	†
	<b>†</b>
	t control lever
750	position degree : - 1
Rated speed rpm : 350	Rated speed rpm : 1174
Rack travel in mm: 5.00	+ Rack travel in mm : 11.00
	1
	Tolerance mm : + 1.30
Del. quantity cm3/1000 strokes : 19.0	
	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : + 3.0	T FOLL LOAD DELIVERY AT FOLE LOAD STOP
Check tolerance	Rated speed rpm : 1050
cm3/1000s. : + 6.0	Aneroid pressure
Spreed	hPa : 1800
Tolerance	Del. quantity
cm3/1000 strokes : 6.0	cm3/1000 strokes : 272.0
Check tolerance	Tolerance
c:n3/1000s. : 10.0	- cm3/1000 strokes : + 1.0
CAD7 (0000: 10:0	Check tolerance
	+ cm3/1000s. : +- 4.0
(B) SETTING OF INJECTION PUMP	+ Spreed
WITH GOVERNOR	Tolerance
	+ cm3/1000 strokes : 5.0
	Check tolerance
GUIDE SLEEVE TRAVEL	+ cm3/1000s. : 9.0
	+
Rated speed rpm : 1106	+
guide steeve	+
travel mm : 8.02	+ CONTROL LEVER
Tolerance mm : + 0.15	+
	+ control lever
Rated speed rpm : 350	position degree : 120.0
guide sleeve	+ tolerance degree : +- 4.0
travel mm : 1.48	†
Tolerance mm : $\leftarrow$ 0.20	+ RATED SPEED
	rack travel mm : 14.30
Rated speed rpm : 900	Rated speed rpm : 1095
guide steeve	+ Tolerance 1/min : + 5
travel mm : 5.69	†
Tolerance mm : + 0.25	rack travel mm : 4.00
200	+ Rated speed rpm : 1190
Rated speed rpm : 580	Tolerance 1/min : + 15

rack travel mm Tolerance mm Rated speed rpm	: 0.50 : ← 0.50 : 1300
LOW IDLE	
control lever position degree tolerance degree	: 64.0 : ← 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 250
CRT mm min.	: > 7.00
Testing:	
Rated speed rpm rack travel mm	: 350 : 5.00
Tolerance mm	: + 0.10
Rated speed rpm	: 450
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 15.30 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 500 : -
MEASUREMENT	
Pressure hPa rack travel mm Tolerance mm	: 700 : 4.60 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 180 : 0.20 : + 0.05

Rated speed rpm Rated speed rpm	: > 100 : < 270
Check speed 1/min Check	: > 80
speed 1/min	: < 290
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	: 1800
Rated speed rpm Del. quantity	·
cm3/1000 strokes Tolerance	: 274.0
cm3/1000 strokes Check tolerance	: +- 3.0
cm3/1000s.	: + 6.0
Aneroid pressure	
hPa Rated speed rpm	500
Del. quantity cm3/1000 strokes Tolerance	: 130.0
cm3/1000 strokes Check tolerance	: + 1.0
cm3/1000s.	: + 4.0
REDUCED QUANTITY	
Aneroid pressure hPa	: 1800
Rated speed rpm Del. quantity	: 1050
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance	: +- 1.5
cm3/1000s.	: +- 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity	: 100
cm3/1000 strokes	: 270.0
cm3/1000 strokes Check tolerance	: +- 10.0
cm3/1000s.	: + 14.0

Start interlock

# LOW IDLE

Rated spread rpm	;	350	
Rack travel in mm Tolerance mm Del. quantity	: +-	5.00 0.10	
cm3/1000 strokes Tolerance	:	19.0	
cm3/1000 strokes Check tolerance	: +-	3.0	
cm3/1000s. Spreed	: +-	6.0	
Tolerance	:	6.0	
cm3/1000s.	:	10.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16,07,97 : ISO 4113 Test oil

Combination No. : 0 402 648 920

Injection pump

Pump designation: PE8P120A320LS7844 EP type number : 0 412 628 260

Governor

Governer design. : RQV350...1050PA870

: -16

: 0 421 813 953 Governer no.

Cust. part No. :

Customer-spec. information Customer : MB-NFZ : 0M442 LA Motor Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance \*C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : + 10.0

Test nazzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 : + 1.5 Tolerance bar

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 2.5 x length mm : 1000

### **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 8-7-2-6-3 :-5-4-1

: 0-45-90-135-180 Phasing : -225-270-315

: +- 0.50 Tolerance

Check

tolerance \*NW : + 0.75

Start of delivery mark

Barrel no. : 8

#### CRT ZERO POSITION

Rack travel in mm : 14.30 Tolerance mm : +- 0.10

#### BASIC SETTING

Rated speed rpm : 600

	† Tolerance mm : + 0.25
Rack travel in mm : 14.30 Tolerance mm : + 0.10	Rated speed rpm : 900 guide sleeve travel mm : 5.65
Del. quantity cm3/1000 strokes : 258.0	Tolerance mm : + 0.25  Rated speed rpm : 1204
Tolerance cm3/1000 strokes : + 1.0	guide sleeve  travel mm : 10.05  Tolerance mm : + 0.25
Check tolerance cm3/1000S. : +- 4.0	GUIDE SLEEVE POSITION
Spreed	
Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1 Rated speed rpm : 1125
Check tolerance cm3/1000S. : 9.0	Rack travel in mm: 17.25 Tolerance mm: + 0.75
Rated speed rpm : 350	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 5.00 Tolerance mm : + 0.10 Del. quantity	Rated speed rpm : 600 Aneroid pressure hPa : 1100
cm3/1000 strokes : 19.0 Tolerance	Del. quantity cm3/1000 strokes : 258.0
cm3/1000 strokes : +- 3.0 Check tolerance	Tolerance + cm3/1000 strokes : +- 1.0
cm3/1000s. : +- 6.0 Spreed	+ Check tolerance + cm3/1000s. : +- 4.0
Tolerance cm3/1000 strokes : 6.0 Check tolerance	Spreed Tolerance cm3/1000 strokes: 5.0
cm3/1000s. : 10.0	Check tolerance cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever position degree : 119.0
Rated speed rpm : 1108 guide sleeve	tolerance degree : + 4.0
travel mm : 8.05 Tolerance mm : + 0.25	RATED SPEED : 14.30
Rated speed rpm : 350	+ Rated speed rpm : 1095 + Tolerance 1/min : +- 5
guide sleeve travel mm : 1.55	rack travel mm : 4.00
Tolerance mm : + 0.25	Rated speed rpm : 1195 Tolerance 1/min : +- 15
Rated speed rpm : 570 guide sleeve	rack travel mm : 0.50
travel mm : 3.55	+ Tolerance mm : + 0.50

Rated speed rpm : 1300	+ Pressure hPa : 1300 + rack travel mm : 0.45 + Tolerance mm : +- 0.05
LOW IDLE	Start interlock
control lever position degree : 67.0 tolerance degree : +- 4.0	Rated speed rpm : > 100 Rated speed rpm : < 270 Check
Setting point w/out bumper spring	speed 1/min :> 80 Check
Rated speed rpm : 250	speed 1/min : < 290
CRT mm min. :> 6.60 Testing:	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 350 rack travel mm : 5.00 Tolerance mm : +- 0.10 Rated speed rpm : 450	Aneroid pressure  hPa : 1800  Rated speed rpm : 1050  Del. quantity  cm3/1000 strokes : 272.0  Tolerance  cm3/1000 strokes : + 1.5
TORQUE CONTROL Rated speed rpm : 600 rack travel mm : 14.30 Tolerance mm : + 0.10	+ Check tolerance + cm3/1000s. : + 4.5
Rated speed rpm : 1050 rack travel mm : 15.30 Tolerance mm : + 0.10	Aneroid pressure  hPa : 1800  Rated speed rpm : 800  Del. quantity  cm3/1000 strokes : 274.0
Rated speed rpm : 800 rack travel mm : 15.30 Tolerance mm : + 0.10	Tolerance cm3/1000s: +- 5.0
ANEROID/ALTITUDE COMPENSATOR TEST	Aneroid pressure hPa :
2-stage LDA setting	Del. quantity cm3/1000 strokes : 140.0 Tolerance
Rated speed rpm : 600 Pressure hPa : 1100	cm3/1000 strokes : +- 1.0 Check tolerance
MEASUREMENT	cm3/1000s. : +- 4.0
Pressure hPa : 290 rack travel mm : -5.50 Tolerance mm : + 0.05	REDUCED QUANTITY  Aneroid pressure  hPa : 1800
Pressure hPa : 780 rack travel mm : -1.30 Tolerance mm : + 0.10	Rated speed rpm : 1050  Del. quantity  cm3/1000 strokes : 206.0

Tolerance cm3/1000 strokes : +- 1.5 Check tolerance cm3/1000s. : +- 4.0

# STARTING FUEL DELIVERY

100 Rated speed rpm : Del. quantity

cm3/1000 strokes : 270.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  10.0

Check tolerance

cm3/1000s. : + 14.0

### LOW IDLE

350 Rated speed rpm :

5.00 Rack travel in mm : : **←** 0.10 Tolerance mm Del. quantity 19.0

cm3/1000 strokes :

Tolerance cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. 10.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 24.04.97 : ISO 4113

Combination No. : 0 402 649 816

Injection pump

Pump designation: PE10P120A520LS7853

EP type number : 0 412 629 810

Governor

Governer design. : RQV300...1150PA1039

: -2K

Governer no.

: 0 421 815 316

Cust. part No. : 3-7225

Customer-spec. information

Customer : MAN

Motor

: D 2840 LE401

Power KW

: 603.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance \*C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

bar

: 208.5

Tolerance bar

: + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm : 4.55 Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order : 10-9A- 4- 1A- 8

: - 7A- 6- 3A- 5

: 0-45-72-117-144 Phasing

: -189-216-261-288

: -333

Tolerance : <del>←</del> 0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : **←** 0.75

Barrel no. : 10

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.35

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 295.0

,	• • •
	guide sleeve
Tolerance	travel mm : 4.21
$cm3/1000$ strokes : $\leftarrow$ 1.0	Tolerance mm : +- 0.25
<del>_</del>	•
Check tolerance	Rated speed rpm : 1450
$cm3/1000s$ , : $\leftarrow$ 4.0	guide steeve
	- travel mm : 13.50
Spreed	Tolerance mm : + 0.50
Spiced	Total arice with . The O. Jo
Talamana	•
Tolerance	ALTAR OLERUS DOOTTAN
cm3/1000 strokes : 5.0	- GUIDE SLEEVE POSITION
	•
Check tolerance	•
cm3/1000s. : 9.0	- control lever
	- position degree : - 1
	- Rated speed rpm : 1280
+	•
Rated speed rpm : 300	- Rack travel in mm : 12.50
	- Toterance mm : + 1.30
Rack travel in mm: 6.80	. लाचका जारक चाममा व ′ दिश्लीकी क
Tolerance mm : + 0.10	
	FIRE LOAD DELTHEDY AT FIRE LOAD CTOD
Del. quantity	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 45.0	
Tolerance	- Rated speed rpm : 1150
cin3/1000 strokes : + 5.0	- Aneroid pressure
+	- hPa : 1300
+	- Del. quantity
(B) SETTING OF INJECTION PUMP	- cm3/1000 strokes : 295.0
WITH GOVERNOR	- Tolerance
4	- cm3/1000 strokes : +- 1.0
	- Check tolerance
GUIDE SLEEVE TRAVEL	- cm3/1000s. : +- 4.0
1	- Spreed
Rated speed rpm : 1214	- Tolerance
guide steeve	- cm3/1000 strokes : 5.0
	- Check tolerance
Tolerance mm : + 0.25	- cm3/1000s. : 9.0
	•
Rated speed rpm : 300	•
guide steeve	
travel mm : 2.24	- CONTROL LEVER
Tolerance mm : + 0.25	•
+	- control lever
Rated speed rpm : 799	position degree : 121.0
guide sleeve	- tolerance degree : + 4.0
travel mm : 6.90	•
Tolerance mm : + 0.25	- RATED SPEED
	- rack travel mm : 12.30
Rated speed rpm : 329	
	- Rated speed rpm : 1203
guide sleeve	Tolerance 1/min : +- 8
travel mm : 2.75	
Tolerance mm : +- 0.25	rack travel mm : 4.00
+	- Rated speed rpm : 1325
Rated speed rpm : 379	- Tolerance 1/min : +- 15
guide sleeve	•
travel mm : 3.53	rack travel mm : 0.50
Toterance mm : +- 0.25	- Tolerance mm : +- 0.50
	- Rated speed rpm : 1450
Rated speed rpm : 450	· ····································
TO THE PROPERTY OF THE PROPERT	
Т	

# LOW IDLE

control lever

position degree : 76.0 tolerance degree : +-4.0

Setting point w/out bumper spring

200 Rated speed rpm

CRT contrain. :>8.20

Testing:

300 Rated speed rpm 6.80 rack travel mm Tolerance mm : + 0.10

Rated speed rpm : 345

TORQUE CONTROL

Rated speed rpm : 1150 13.35 rack travel mm Tolerance mm : + 0.05

mon basis tests 700 : 12.00 rack travel mm : + 0.10Tolerance mm

900 Rated speed rpm 13.00 rack travel mm Tolerance mm : + 0.10

Rated speed rpm : 500 6.90 rack travel mm : + 0.10Tolerance mm

500 Rated speed rpm rack travel mm 8.60 : + 0.10Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm : 1150 Pressure hPa : 1300 13.35 rack travel mm Tolerance mm : +- 0.05

: 1150 Rated speed rpm Pressure hPa 9.60 rack travel mm :

: +- 0.10 Tolerance mm

**MEASUREMENT** 

Rated speed rpm : 1150

850 Pressure hPa : rack travel mm 12.15 : + 0.15 Tolerance mm

400 Pressure hPa 9.95 rack travel mm Tolerance mm : **←** 0.05

Start interlock

Rated speed rpm :> 100 Rated speed rpm : < 240

Check

speed 1/min : > 80

Check

speed 1/min : < 260

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1300 hPa Rated speed rpm 700 Del. quantity

cm3/1000 strokes : 250.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance

cm3/1000s. : +-6.0

Spreed Tolerance

cm3/1000 strokes : 10.0 Check tolerance

cm3/1000S. 14.0

Aneroid pressure

1300 hPa 900 Rated speed rpm

Del. quantity

cm3/1000 strokes : 280.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. : +-6.0

Delivery for shutoff assemblies (refer to cam sequence).

Arbitrary delivery for standard plunger

barrel assemblies.

Aneroid pressure

hPa 500 Rated speed rpm

Del. quantity cm3/1000 strokes : 0.1

Tolerance

cm3/1000 strokes : +-0.1

Delivery for shutoff assemblies (refer to cam sequence). Arbitrary delivery for standard plunger barrel assemblies.

Aneroid pressure

hPa 500 Rated speed rpm : Del. quentity

cm3/1000 strokes : 135.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  10.0

Aneroid pressure

hPa Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 170.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. : ← 4.0

### STARTING FUEL DELIVERY

100 Rated speed rpm : 19.70 rack travel mm

Del. quantity

110.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : +- 10.0

### LOW IDLE

Delivery for standard plunger/barrel assemblies.

Zero delivery for shutoff assemblies (refer to cam sequence).

300 Rated speed rpm :

Rack travel in mm : 6.80 Tolerance mm : + 0.10 Del. quantity

cm3/1000 strokes : 45.0

Tolerance

cm3/1000 strokes : + 5.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.07.97 Test oil : ISO 4113

Combination No. : 0 402 676 832

Injection pump

Pump designation : PE6P120A320LS7898 EP type number : 0 412 626 957

Governor

Governer design. : RSV350...1000P0A648

Governer no. : 0 421 833 565

Cust. part No. : 0270748202

Customer-spec. information Customer : MB-NFZ : 0M441 A Motor Power KI: 170.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. l/h : 120 Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05 Check

tolerance mm : ← 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 0-60-120-180-240 Phasing

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance \*NW : + 0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 980

	1
Rack travel in mm : 11.90 Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 175.0	Rated speed rpm : 980 Aneroid pressure hPa : 1000
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 175.0
Check tolerance cm3/1000s. : + 4.0	Tolerance : + 1.0 Check tolerance
Spreed	- cm3/1000s. : +- 4.0 - Spreed - Tolerance
Tolerance cm3/1000 strokes : 5.0	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	T
	CONTROL LEVER
Rated speed rpm : 350	control lever position degree : 93.0
Rack travel in mm: 5.00 Tolerance mm: +- 0.10 Del. quantity	+ tolerance degree : +- 4.0 -
cm3/1000 strokes : 19.0 Tolerance	ASSEMBLY GOVERNOR SETTING
<pre>cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000S. : +- 6.0</pre>	Rated speed rpm : 1030 rack travel mm : 10.90
Spreed Tolerance	Rated speed rpm : 1080 Tolerance 1/min : + 4
cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0	rack travel mm : 4.00 rack travel mm : 0.85
	Tolerance mm : + 0.55 Rated speed rpm : 1300
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Dated aread 1071
	Rated speed rpm : 1031 rack travel mm : 10.90
GUIDE SLEEVE POSITION	Rated speed rpm : 1081 Tolerance 1/min : + 4 rack travel mm : 4.00
control lever position degree : - 3	rack travel mm : 0.85
Rated speed rpm : 800  Rack travel in mm : 0.50	Tolerance mm : +- 0.55 Rated speed rpm : 1300
Tolerance mm : + 0.20	Rated speed rpm : 1032
governor spring  pre-tension  click setting x : 4.50	rack travel mm : 10.90  Rated speed rpm : 1082
CETCA SELETING A . 4.50	Tolerance 1/min : +- 4 rack travel mm : 4.00

rack travel mm	: 0.85
Tolerance mm	: ← 0.55
Rated speed rpm	: 1300
Rated speed rpm	: 1033
rack travel mm	: 10.90
Rated speed rpm	: 1083
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel nm	: 0.85
Tolerance mm	: ← 0.55
Rated speed rpm	: 1300
Rated speed rpm	: 1034
rack travel mm	: 10.90
Rated speed rpm	: 1084
Tolerance 1/min	: ← 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: ← 0.55
Rated speed rpm	: 1300
Rated speed rpm	: 1035
rack travel mm	: 10.90
Rated speed rpm	: 1085
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mma	: 0.85
Tolerance mm	: ← 0.55
Rated speed rpma	: 1300
LOW IDLE	
control lever position degree tolerance degree	: 73.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 19.50
Testing:	

rack travel man Rated speed rpm Tolerance 1/min	: 2.00 : 405 : +- 30
SET IDLE AUXILIAR	Y SPRING
rack travel mm	: 2.00
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 980 : 11.90 : + 0.05
Rated speed rpm rack travel man Tolerance man	: 600 : 11.90 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 400 : 11.20 : + 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 400 : 1000 : 11.90 : +- 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 400 : − : 10.40 : ← 0.15
MEASUREMENT	
Rated speed rpm	: 400
Pressure hPa Tolerance mm	: 300 : + 0.15
Pressure hPa rack travel mm Tolerance mm	: 350 : 11.20 : + 0.15
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1000 : 600

Rated speed rpm : 350 rack travel mm : 5.00 Tolerance mm : + 0.10

Del. quantity		
cm3/1000 strokes	:	173.0
Tolerance cm3/1000 strokes	: +-	- 3.0
Check tolerance	• '	3.0
cm3/1000s.	: +-	- 6.0
Spreed		
Tolerance cm3/1000 strokes	:	8.0
Check tolerance	•	
cm3/1000s.	:	12.0
Aneroid pressure		7.50
hPa Rated speed rpm	:	350 400
Del. quantity	•	400
cm3/1000 strokes Tolerance	:	131.0
cm3/1000 strokes	* ~~	1.0
Check tolerance cm3/1000s.	: +-	- 4.0
Spreed	-	
Tolerance cm3/1000 strokes		8.0
CHD/ (UUU STPOKES	:	0.0
Aneroid pressure		
hPa	:	
Rated speed rpm Del. quantity	:	500
cm3/1000 strokes	:	136.0
Tolerance		
cm3/1000 strokes Check tolerance	: +-	- 1.0
cm3/1000s.	: +-	- 4.0
Spreed		
Tolerance		8.0
cm3/1000 strokes Check tolerance	:	0.0
cm3/1000s.	:	12.0
STARTING FUEL DEL	IVERY	,
Rated speed rpm Del. quantity	:	100
cm3/1000 strokes	:	180.0
Tolerance	e .b.:	- 10.0
cm3/1000 strokes Check tolerance	-	- ;0.0
cm3/1000s.	: +-	14.0
LOW IDLE		
Rated speed rpm	:	350

M07

Rack travel in mm	:		5.00
Tolerance mm	:	+	0.10
Del. quantity			40.0
cm3/1000 strokes Tolerance	:		19.0
cm3/1000 strokes		1	3.0
Check tolerance	•	<b>-</b>	3.0
cm3/1000s.		+	6.0
Spreed	•	•	0.0
Tolerance			
cm3/1000 strokes	:		6.0
Check tolerance			
cm3/1000s.	:		10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.06.97 Test oil : ISO 4113

Combination No. : 0 402 746 647

Injection pump

Pump designation : PES6P120A720RS7366 EP type number : 0 412 726 933

Governor

Governer design. : RQV275...1100PA1208K

6overner no. : 0 421 815 459

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE

Motor

: 8460.41,4000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

40 temp. °C Tolerance °C

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5 Tolerance bar : ← 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : - 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.35

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5- 3- 6- 2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance \*NW : **←** 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 12.45 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 276.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

Spreed

Tolerance cm3/1000 strokes	: 5.0	+ Aneroid pressure hPa	: 1200
Check tolerance	: 9.0	Del. quantity cm3/1000 strokes	: 276.0
CM3/ (UUUS.	: 9.0 	+ Tolerance cm3/1000 strokes	: + 1.0
Dated and dam	. 275	+ Check tolerance cm3/1000s.	: +- 4.0
Rated speed rpm		+ Spreed + Tolerance	
Rack travel in mm Tolerance mm	: 6.70 : ← 0.10	+ cm3/1000 strokes + Check tolerance	
Del. quantity cm3/1000 strokes	: 23.0	cm3/1000s.	: 9.0
Tolerance		+	
cm3/1000 strokes Check tolerance		CONTROL LEVER	
cm3/1690s. Spreed	: + 6.0	t control lever	
Tolerance		position degree	• 117 በ
cm3/1000 strokes Check tolerance	: 8.0	tolerance degree	
cm3/1000s.	: 12.0	RATED SPEED	
		rack travel mm	: 11.40
(D) 00000000 00 000		+ Rated speed rpm	
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	Tolerance 1/min Check	: + 5
MIIII GOAGUIOU		speed 1/min	: + 10
GUIDE SLEEVE TRAV	EL	rack travel mm	
		Rated speed rpm	: 1260
Rated speed rpm	: 1155	+ Tolerance 1/min	: +- 15
guide sleeve travel mm	: 9.75	+ Check + speed 1/min	: +- 20
Tolerance mm	: + 0.15	+	
Data of an and som	. 275	+ rack travel mm	: 0.50
Rated speed rpm guide sleeve	: 275	Tolerance mm Rated speed rpm	: ← 0.50 : 1350
travel ma	: 1.70	T Nated speed / pill	. 1330
Tolerance mm	: ← 0.20	1	
Rated speed rpm	: 790	101.7015	
guide sleeve travel mm	: 6.42	LOW IDLE	
Tolerance mm	: + 0.25		
Rated speed rpm	: 460	<pre>control lever position degree</pre>	• 76.0
guide sleeve		tolerance degree	
travel mm	: 3.77	+	
Tolerance mm	: ← 0.25	Setting point w/o	ut bumper spring
Rated speed rpm guide sleeve	: 1440	Rated speed rpm	: 100
travel mm	: 13.50	CRT mm min.	: > 8.20
Tolerance mm		Testing:	
		+	
FULL LOAD DELIVER	Y AT FULL LOAD STOP	Rated speed rpm	: 275
Dated speed san	. 1100	rack travel mm Tolerance mm	: 6.70 : ± 0.10
Rated speed rpm	: 1100	T rocerance mm	. <del></del> 0.70

MO9

### Check tolerance cm3/1000s. : + 6.0  ### 6.0	Rated speed rpm	: 335	Aneroid pressure
Del. quantity			
ted speed rpm : 1100	POLIE CONTROL		
Retail   12.45   Tolerance   12.45   Check tolerance   13.00   Check tolerance   13.30   Check		: 1100	rm3/1000 etrokes · 287 0
ted speed rpm : 650 ck travel mm : 13.30 lerance mm : + 0.10  Aneroid pressure hPa : 1200 ck travel mm : + 0.20  EROID/ALTITUDE MPENSATOR TEST  TIING  ted speed rpm : 800 ck travel mm : 13.30 lerance mm : + 0.20  EROID/ALTITUDE MPENSATOR TEST  TOLERANCE  ted speed rpm : 800 ck travel mm : 13.30 lerance mm : + 0.10  TOLERANCE  ted speed rpm : 800 ck travel mm : 13.30 lerance mm : + 0.10  TOLERANCE  TOLERA	ack travel mm	12.45	
ted speed rpm : 650 ck travel mm : 13.30 lerance mm : + 0.10  Aneroid pressure hPa : 1200 ck travel mm : + 0.20  EROID/ALTITUDE MPENSATOR TEST  TIING  ted speed rpm : 800 ck travel mm : 13.30 lerance mm : + 0.20  EROID/ALTITUDE MPENSATOR TEST  TOLERANCE  ted speed rpm : 800 ck travel mm : 13.30 lerance mm : + 0.10  TOLERANCE  ted speed rpm : 800 ck travel mm : 13.30 lerance mm : + 0.10  TOLERANCE  TOLERA	olerance mm	+ 0.05	
ted speed rpm : 650 ck travel mm : 13.30 lerance mm : + 0.10  ved speed rpm : 800 ck travel mm : 13.30 lerance mm : + 0.20  ved speed rpm : 800 pel. quantity cm3/1000 strokes : 293.0 Tolerance cm3/1000 strokes : 293.0 Tolerance cm3/1000strokes : - 3.0 Check tolerance cm3/1000strokes : - 4.0 lerance mm : + 0.10  TTING  TTING  TTING  THE Speed rpm : 800 pel. quantity cm3/1000strokes : 152.0 Tolerance cm3/1000strokes : 152.0 Tolerance cm3/1000strokes : 152.0 Tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 1.0 Check tolerance cm3/1000strokes : + 15.0 Tolerance mm : + 0.30 Del. quantity cm3/1000strokes : + 15.0 Check tolerance cm3/1000strok	reer carloc man	. 0.03	
Aneroid pressure   1200	ated speed rom	: 650	
Lerance mm	ack travel mm	: 13.30	
Aneroid pressure hPa : 1200 ck travel mm : 13.30 lerance mm : + 0.20  EROID/ALTITUDE MPENSATOR TEST  TTING  ted speed rpm : 800 ck travel mm : 13.30  terance mm : + 0.10  TTING  Aneroid pressure hPa : 2.00 check tolerance cm3/1000 strokes : 293.0  Tolerance cm3/1000 strokes : 4.0  Aneroid pressure hPa : - cm3/1000 strokes : 4.0  Aneroid pressure hPa : - cm3/1000 strokes : + 3.0  Tolerance cm3/1000 strokes : + 1.0  Tolerance cm3/1000 strokes : 152.0  Tolerance cm3/1000 strokes : + 1.0  Tolerance cm3/1000 strokes : + 1.0  Check tolerance cm3/1000 strokes : + 1.0  Check tolerance cm3/1000 strokes : + 1.0  Tolerance cm3/1000 strokes : + 1.0  Tolerance cm3/1000 strokes : + 1.0  Tolerance cm3/1000 strokes : + 1.0  Tolerance cm3/1000 strokes : + 1.0  Tolerance cm3/1000 strokes : + 1.0  Tolerance cm3/1000 strokes : 115.0  Tolerance cm3/1000 strokes : 115.0  Tolerance cm3/1000 strokes : + 15.0  Tolerance cm3/1000 strokes : 115.0  Tolerance cm3/1000 strokes : + 15.0  Tolerance cm3/1000 strokes : + 15.0  Tolerance cm3/1000 strokes : + 15.0  Tolerance cm3/1000 strokes : 175.0  Tolerance cm3/1000 strokes : + 15.0  Tolerance cm3/1000 strokes : 275  EL DELIVERY CHARACTERISTICS	oterance mn	: + 0.10	
New Appendix   New			+ Aneroid pressure
Cm3/1000 strokes : 293.0	aved speed rpm	: 800	
Cm3/1000 strokes : 293.0	ack travel mm	: 13.30	
Cm3/1000 strokes : 293.0	olerance ma	: <b>←</b> 0.20	And minutes and a
Tolerance			+ cm3/1000 strokes : 293.0
### Check tolerance cm3/1000s. : +- 6.0  ### Check tolerance cm3/1000s. : +- 6.0  ### Check tolerance cm3/1000s. : +- 6.0  ### Check tolerance cm3/1000s. : +- 6.0  ### Check tolerance cm3/1000s. : +- 6.0  ### Aneroid pressure hPa : - Rated speed rpm : 650 pel. quantity cm3/1000 strokes : 152.0  ### Tolerance cm3/1000 strokes : 152.0  ### Tolerance cm3/1000strokes : +- 1.0  ### Check tolerance cm3/1000strokes : 152.0  ### Tolerance cm3/1000strokes : +- 4.0  ### Tolerance cm3/1000strokes : +- 4.0  ### Tolerance mm : +- 0.10  ### Aneroid pressure hPa : Rated speed rpm : 650 pel. quantity cm3/1000strokes : 152.0  ### Tolerance cm3/1000strokes : +- 4.0  ### Tolerance mm : +- 0.30  ### Del quantity cm3/1000strokes : 115.0  ### Tolerance cm3/1000strokes : 115.0  ### Tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tole			Tolerance
### Check tolerance cm3/1000s. : +- 6.0  ### Check tolerance cm3/1000s. : +- 6.0  ### Check tolerance cm3/1000s. : +- 6.0  ### Check tolerance cm3/1000s. : +- 6.0  ### Check tolerance cm3/1000s. : +- 6.0  ### Aneroid pressure hPa : - Rated speed rpm : 650 pel. quantity cm3/1000 strokes : 152.0  ### Tolerance cm3/1000 strokes : 152.0  ### Tolerance cm3/1000strokes : +- 1.0  ### Check tolerance cm3/1000strokes : 152.0  ### Tolerance cm3/1000strokes : +- 4.0  ### Tolerance cm3/1000strokes : +- 4.0  ### Tolerance mm : +- 0.10  ### Aneroid pressure hPa : Rated speed rpm : 650 pel. quantity cm3/1000strokes : 152.0  ### Tolerance cm3/1000strokes : +- 4.0  ### Tolerance mm : +- 0.30  ### Del quantity cm3/1000strokes : 115.0  ### Tolerance cm3/1000strokes : 115.0  ### Tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : +- 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tolerance cm3/1000strokes : 15.0  ### Check tole	VEROID/ALTITUDE		+ cm3/1000 strokes : +- 3.0
### TTING    ted speed rpm : 800	OMPENSATOR TEST		+ Check tolerance
### TTING    ted speed rpm : 800			+ cm3/1000s. : +- 6.0
ted speed rpm : 800			+
ted speed rpm : 800 essure hPa : 1200 ck travel mm : 13.30 lerance mm : + 0.10  ASUREMENT  ted speed rpm : 800 essure hPa : 290 ck travel mm : 9.40 lerance mm : + 0.10  ASUREMENT  ted speed rpm : 800 essure hPa : 290 ck travel mm : 10.60 lerance mm : + 0.20 essure hPa : 520 ck travel mm : 12.50 lerance mm : + 0.05  essure hPa : 520 ck travel mm : 12.50 lerance mm : + 0.05  art interlock  ted speed rpm : > 170 ted speed rpm : > 150 esc esc esc esc 1/min : > 150 esc esc 1/min : > 240  EL DELIVERY CHARACTERISTICS  hPa : - 650 Rated speed rpm : 650 Check tolerance cm3/1000 strokes : 100 rack travel mm : 12.00 Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : + 15.0 Check tolerance cm3/1000s. : + 19.0  Rated speed rpm : 275  EL DELIVERY CHARACTERISTICS  hPa : 650 Rated speed rpm : 102.0 Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : - 15.0 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 23.0 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 23.0	ETTING		
### Rated speed rpm : 650 ck travel mm : 13.30 lerance mm : + 0.10  ### Del. quantity cm3/1000 strokes : 152.0 Tolerance ted speed rpm : 800 essure hPa : -			
Del. quantity   cm3/1000 strokes : 152.0   Tolerance mma   : + 0.10   Tolerance cm3/1000 strokes : 152.0   Tolerance cm3/1000 strokes : + 1.0   Check tolerance cm3/1000s.	ated speed rpm	: 800	
Ck travel mm			+ Rated speed rpm : 650
Tolerance cm3/1000 strokes : +- 1.0 check tolerance cm3/1000 strokes : +- 1.0 check tolerance cm3/1000s. : +- 4.0 check tolerance cm3/1000s. : +- 100 check tolerance cm3/1000 strokes : 100 check tolerance cm3/1000 strokes : 115.0 check tolerance cm3/1000s. : +- 15.0 check tolerance cm3/1000s. : +- 19.0 check tolerance cm3/1000s. : +- 10.10 check tolerance cm3/1000s. : +- 10.10 check tolerance cm3/1000s. : +- 10.10 check tolerance cm3/1000s. : 10.10 check toleran	ack travel mm	: 13.30	+ Del. quantity
ted speed rpm : 800 essure hPa : - ck travel mm : 9.40 lerance mm : + 0.10  ASUREMENT  ted speed rpm : 800  essure hPa : 290 ck travel mm : 10.60 lerance mm : + 0.20  essure hPa : 520 ck travel mm : 12.50 lerance mm : + 0.05  art interlock  ted speed rpm : > 170 ted speed rpm : > 170 ted speed rpm : > 220  art interlock  EL DELIVERY CHARACTERISTICS  check tolerance cm3/1000 strokes : + 1.0  check tolerance cm3/1000 strokes : + 15.0  Check tolerance cm3/1000 strokes : + 19.0  EL DELIVERY CHARACTERISTICS	olerance mm	: <b>←</b> 0.10	
Check tolerance   Check tolerance   Check tolerance   Check travel mm   19.40   Check tolerance   Cm3/1000S.   1 + 4.0		***	
Ck travel mm	ated speed rpm	: 8003	
STARTING FUEL DELIVERY   STARTING FUEL DELIVERY	ressure hPa	•	
ASUREMENT  ted speed rpm : 800  essure hPa : 290 ck travel mm : 10.60 lerance mm : + 0.20  essure hPa : 520 ck travel mm : 12.50 lerance mm : + 0.05  art interlock  ted speed rpm : > 170 ted speed rpm : > 170 ted speed rpm : < 220  eck eed 1/min : > 150 eck eed 1/min : < 240  EL DELIVERY CHARACTERISTICS  TARTING FUEL DELIVERY  Rated speed rpm : 100 rack travel mm : 12.00 Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 115.0 Check tolerance cm3/1000s. : +- 19.0  Rated speed rpm : 275  Rack travel in mm : 6.70 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 23.0 Tolerance			+  cm3/1000s. : + 4.0
STARTING FUEL DELIVERY   Rated speed rpm : 800   Rated speed rpm : 100   rack travel mm : 12.00   rack travel mm : 12.00   Tolerance mm : + 0.30   Del. quantity   cm3/1000 strokes : 115.0   Tolerance cm3/1000 strokes : + 15.0   Check tolerance cm3/1000s. : + 19.0   Check tolerance cm3/1000s. : +	olerance ma	: <b>←</b> 0.10	†
STARTING FUEL DELIVERY   Rated speed rpm : 800   Rated speed rpm : 100   rack travel mm : 12.00   rack travel mm : 12.00   Tolerance mm : + 0.30   Del. quantity   cm3/1000 strokes : 115.0   Tolerance cm3/1000 strokes : + 15.0   Check tolerance cm3/1000s. : + 19.0   Check tolerance cm3/1000s. : +	EACHDEMENT		
### Rated speed rpm : 800  ### Rated speed rpm : 100  ### rack travel mm : 12.00  ### rack travel mm : 12.00  ### Tolerance mm : + 0.30  ### Det. quantity  ### cm3/1000 strokes : 115.0  ### Tolerance cm3/1000 strokes : + 15.0  ### Check tolerance  ### Check tolerance  ### cm3/1000s. : + 19.0  ### Rated speed rpm : + 0.30  ### Det. quantity  ### cm3/1000 strokes : 115.0  ### Check tolerance  ### cm3/1000s. : + 19.0  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rated speed rpm : 275  ### Rack travel in mm : 6.70  ### Tolerance mm : + 0.10  ### Det. quantity  ### cm3/1000 strokes : 23.0  ### Tolerance mm : + 0.10  ### Det. quantity  ### Com3/1000 strokes : 23.0  ### Tolerance mm : + 0.10  ### Det. quantity  ### Com3/1000 strokes : 23.0  ### Tolerance mm : + 0.10  ### Det. quantity  ### Com3/1000 strokes : 23.0  ### Tolerance mm : + 0.10  ### Det. quantity  ### Com3/1000 strokes : 23.0  ### Tolerance mm : + 0.10  ### Det. quantity  ### Com3/1000 strokes : 23.0  ### Tolerance mm : + 0.10  ### Det. quantity  ### Com3/1000 strokes : 23.0	EASUREMEN!		I STARTING FILE DEL TUEDY
Rated speed rpm : 100 rack travel mm : 12.00 rack travel mm : + 0.30  Det. quantity cm3/1000 strokes : 115.0 rolerance cm3/1000 strokes : +- 15.0 check tolerance cm3/1000s. : +- 19.0  art interlock  ted speed rpm : > 170 ted speed rpm : > 220  LOW IDLE  Rated speed rpm : 275  Rack travel in mm : 6.70 rack travel in mm : 6.70 rolerance mm : +- 0.10 Det. quantity cm3/1000 strokes : 23.0 Tolerance	ated speed rom	• 200	T STARTING FUEL DELIVERT
rack travel mm	area speed thu	. •	Rated speed rnm · 100
Ck travel mma	ressure hPa	290	
Del. quantity   cm3/1000 strokes : 115.0   Tolerance   cm3/1000 strokes : 115.0   Tolerance   cm3/1000 strokes : +- 15.0   cm3/1000 strokes : +- 15.0   Check tolerance   cm3/1000s. : +- 19.0   cm3/1000s. : +- 19.0			
cm3/1000 strokes : 115.0   Tolerance   ck travel mm : 12.50   check tolerance   cm3/1000s. : +- 15.0   check tolerance   cm3/1000s. : +- 19.0   cm3/1000s. : +- 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   cm3/1000s. : 19.0   check tolerance   check tolerance   cm3/100s. : 19.0   check tolerance   check tolera			
Tolerance   Tolerance   Cm3/1000 strokes   +- 15.0   Check tolerance   Cm3/1000s.   +- 19.0	COLORIDE WIN	0.20	
ck travel mm : 12.50	ressure hPm	: 520	
Check tolerance cm3/1000s. : +- 19.0			
cm3/1000s. : +- 19.0			
ted speed rpm : > 170 ted speed rpm : < 220  ted speed rpm : < 220  ted speed rpm : < 275  eck eed 1/min : > 150 eck eed 1/min : < 240  EL DELIVERY CHARACTERISTICS  LOW IDLE  Rated speed rpm : 275  Rack travel in mm : 6.70 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 23.0 Tolerance		J : U:UJ	
ted speed rpm : > 170 ted speed rpm : < 220  Eck eed 1/min : > 150 eck eed 1/min : < 240  EL DELIVERY CHARACTERISTICS  LOW IDLE  Rated speed rpm : 275  Rack travel in mm : 6.70 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 23.0 Tolerance			1 17.0
ted speed rpm : > 170 ted speed rpm : > 220  Eck eed 1/min : > 150 eck eed 1/min : < 240  EL DELIVERY CHARACTERISTICS  LOW IDLE  Rated speed rpm : 275  Rack travel in mm : 6.70 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 23.0 Tolerance	tart interlock		+
ted speed rpm : < 220  eck eed 1/min : > 150 eck eed 1/min : < 240  EL DELIVERY CHARACTERISTICS  LOW IDLE  Rated speed rpm : 275  Rack travel in mm : 6.70 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 23.0 Tolerance			<del> </del>
ted speed rpm : < 220  eck eed 1/min : > 150 eck eed 1/min : < 240  EL DELIVERY CHARACTERISTICS  LOW IDLE  Rated speed rpm : 275  Rack travel in mm : 6.70  Tolerance mm : + 0.10  Del. quantity cm3/1000 strokes : 23.0  Tolerance	ted speed rom	: > 170	
eck eed 1/min :> 150 eck eed 1/min :< 240  Rack travel in mm : 6.70 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 23.0 Tolerance		: < 220	+ LOW IDLE
red 1/min :> 150  Rack travel in mm : 6.70  Tolerance mm : + 0.10  Del. quantity  cm3/1000 strokes : 23.0  Tolerance			<u> </u>
eed 1/min :> 150  eck eed 1/min :< 240  Tolerance mm :+ 0.10  Del. quantity cm3/1000 strokes : 23.0  EL DELIVERY CHARACTERISTICS  Tolerance	neck		Rated speed rpm : 275
eck eed 1/min : < 240		: > 150	+
eed 1/min : < 240	neck		Rack travel in mm: 6.70
Del. quantity cm3/1000 strokes : 23.0  EL DELIVERY CHARACTERISTICS + Tolerance		: < 240	
cm3/1000 strokes : 23.0 to delivery Characteristics to tolerance			
EL DELIVERY CHARACTERISTICS + Tolerance			
	EL DELIVERY CHA	ARACTERISTICS	
— I/N 3/ 11 a a 1 / 11 / 12 / 12 / 13 / 14 / 14 / 14 / 14 / 14 / 14 / 14	in the stail to the	44161 E4401 200	+ cm3/1000 strokes : +- 3.0

Check tolerance cm3/1000s. : +- 6.0 Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) ¥400/...

Edition : 24.01.97 Test oil : ISO 4113

Combination No. : 0 402 796 814

Injection pump

Pump designation : PES6P120A720RS7367 EP type number : 0 412 726 932

Governor

Governer design. : RE30

Governer no. : 0 421 890 026

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE Motor : 8460.41.6000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

**REMARKS** 

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS No basic setting. Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure har : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance \*NW : +- 0.75

Start of delivery blocking

Check

tolerance \*NW : +- 0.40

Barrel no. : 1

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1:

Setting point (P, R and H pump)

Uact V 3.100 13.00 CRT mm Tolerance mm : +/- 0.05

Check

tolerance mm : +/- 0.10

Check value (P, R and H pump)

Uact V 1.700 CRT mm 6.15 : +/- 0.25 Tolerance mm Check

: +/- 0.30 tolerance mm

Setting point (M pump)

3.100 Uact V 12.50 CRT mm Tolerance mm : +/- 0.05

Check

: +/- 0.10 tolerance mm

Check value (M pump)

Uact V 1.700 CRT mm 5.50 Tolerance mm : +/- 0.25 Check

: +/- 0.30 tolerance mm

Stop position

Uact V : Value with

deenergised adjusting magnet

and control rod in stop position.

0.75 CRT mm

Tolerance mm : +/- 0.25

Check

tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR (All P and R pumps not H and M pumps)

Test with control rod in stop position

Engine speed min-1: 60 Amplitude V : 1.4 : +/- 0.6 Tolerance V Check tolerance V : +/- 1.20

Engine speed min-1: 600

Difference

Amplitude to

Amolitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT VI

Rated speed rpm : 1050 Uact V 2.900

Del. quantity

cm3/1000 strokes : 296.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : + 4.0

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 9.0

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500 Uact V 2.690 Del. quantity

cm3/1000 strokes : 238.0

Tolerance

cm3/1000 strokes : + 3.0

Check tolerance

cm3/1000s. : +- 6.0

TEST POINT L1

Rated speed rpm 275 1.600 Uact V Tolerance Volt : + 0.060

Check tolerance

: + 0.080Volt

Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance cm3/1000s.	:	12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 24.04.97 Edition : ISO 4113 Test oil

Combination No. : 0 402 840 301

Injection pump

Pump designation : PE12P12OA520L88507

EP type number : 0 412 820 201

Governor

Governer design. : RQV300...1150PA1039

: -3K

Governer no. : 0 421 815 980

Cust. part No. : 51.11103-7329

Customer-spec. information

Customer : MAN Motor : D 28 : D 2842 LE 405

Power KW : 882.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 078

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Overflow quantity

min. L/h : 180 Tolerance L/h : ← 15.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x Length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 6.45
Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm: 13.00 Tolerance mm : +- 0.50

Firing order : 12-1A- 5- 9A- 8

: - 3A- 4-11A- 10 : - 2A- 6

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345

Tolerance : **←** 0.50

Check

tolerance "NW : **←** 0.75

Start of delivery mark

Tolerance : + 0.10

Check

tolerance \*NW : + 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

		1
Rack travel in mm Tolerance mm	: 13.50 : ← 0.05	Ra gu tr
Del. quantity cm3/1000 strokes	: 331.0	+ To
Tolerance cm3/1000 strokes	: + 1.0	gu tr To
Check tolerance cm3/1000s.	: + 4.0	‡ <u>-</u>
Spreed		+ 50
Tolerance cm3/1000 strokes	: 8.0	Ra Ra To
Check tolerance cm3/1000s.	: 12.0	FU
	Ter tinducing die Striff die Anthony was der Striff der Antonio der Striff der	Ra
Rated speed rpm	: 390	+ An
Rack travel in mm Tolerance mm	: 5.20 : +- 0.10	+ hP + De + cm
Del. quantity cm3/1000 strokes Tolerance	: 49.0	+ To + Cm
cm3/1000 strokes Check tolerance	: ← 3.0	+ cm + Sp
cm3/1000s. Spreed	: + 6.0	To cm
Tolerance cm3/1000 strokes	: 8.0	+ Ch + cm
Check tolerance cm3/1000s.	: 12.0	‡
		+ - co
(B) SETTING OF IN	JECTION PUMP	+ co
		+ po
GUIDE SLEEVE TRAV	EL	+ RA
Rated speed rpm guide sleeve travel mm	: 1206 : 9.84	ra + Ra
Tolerance mm	: ← 0.25	† To
Rated speed rpm guide sleeve	: 300	+ ra + Ra + To
travel mm Tolerance mm	: 1.68 : + 0.25	+ ra
Rated speed rpm guide sleeve	: 797	† To
travel mm Tolerance mm	: 6.36 : + 0.25	‡

Rated speed rpm	: 460
guide sleeve	. 400
travel mm	: 3.78
Tolerance mm	: +- 0.25
Rated speed rpm	: 1500
guide sleeve	47.50
travel mm	: 13.50 : + 0.50
Tolerance mm	: + 0.50
GUIDE SLEEVE POSITION	
Rated speed rpm	: 1330
Dook tookal to om	. 11 90
Rack travel in mm Tolerance mm	: +- 1.30
IOCEI GILCE HEN	1.30
***************************************	
FULL LOAD DELIVER	Y AT FULL LOAD STOP
Datad anacd	: 1150
Rated speed rpm Aneroid pressure	: 1150
hPa	: 2000
Del. quantity	. 2000
cm3/1000 strokes	: 331.0
Tolerance	
cm3/1000 strokes	: + 1.0
Check tolerance	
cm3/1000s.	: +- 4.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance	. 0.0
cm3/1000s.	: 12.0
CINC/ 10000:	
CONTROL LEVER	
control lever	
position degree	: 118.0
tolerance degree	
•	· · · ·
RATED SPEED	40
rack travel mm	: 12.50
Rated speed rpm	: 1195
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
Rated speed rpm	: 1325
Tolerance 1/min	: + 15
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1400

control lever position degree tolerance degree	: 71.0
Cottina noint !!/o	: <b>←</b> 4.0
secting point w/o	ut bumper spring
Rated speed rpm	: 200
CRT mm min.	: > 7.40
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.20 : ← 0.10
Rated speed rpm	: 340
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1150 : 13.50 : + 0.05
Rated speed rpm rack travel mm Tolerance mma	: 1000 : 13.50 : ← 0.10
Rated speed rpm rack travel mra Tolerance mm	: 850 : 12.60 : ← 0.10
Rated speed rpm rack travel mm Folerance mm	: 650 : 11.25 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 6.30 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 7.40 : ← 0.10

FUEL DELIVERY CHAP	RACTERISTICS
Aneroid pressure	
hPa	: 2000
Rated speed rpm	: 1000
Del. quantity	
cm3/1000 strokes	: 335.0
Tolerance	
cm3/1000 strokes	: <b>←</b> 3.0
Check tolerance	
cm3/1000s.	: +- 6.0
Approved approxima	
Aneroid pressure hPa	: 2000
Rated speed rpm	: 850
Del. quantity	. 050
cm3/1000 strokes	: 315.0
Tolerance	
cm3/1000 strokes	: <b>←</b> 3.0
Check tolerance	
cm3/1000s.	: +- 6.0
Aneroid pressure	
hPa	: 2000
Rated speed rpm	: 650
Del. quantity	
cm3/1000 strokes	: 288.0

Rated speed rpm : 1000

Pressure hPa : rack travel mm : 7.60
Tolerance mm : + 0.15

Rated speed rpm : 1000

Pressure hPa : 220 rack travel mm : 7.95 Tolerance mm : + 0.05

Pressure hPa : 1050 rack travel mm : 11.75 Tolerance mm : +- 0.15

Rated speed rpm : > 100 Rated speed rpm : < 220

speed 1/min : > 80

speed 1/min : < 240

MEASUREMENT

Start interlock

Check

Check

Rated speed rpm : 1000
Pressure hPa : 2000
rack travel mm : 13.50
Tolerance mm : + 0.05

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 6.0

Delivery for shutoff assemblies (refer to cam sequence). Arbitrary delivery for standard plunger barrel assemblies.

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 0.1

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.1

Check tolerance

cm3/1000s. :  $\leftarrow$  0.1

Delivery for shutoff assemblies (refer to cam sequence).
Arbitrary delivery for standard plunger barrel assemblies.

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 165.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance

cm3/1000S. :  $\leftarrow$  15.0

Aneroid pressure

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 175.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. :  $\leftarrow$  4.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 115.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance

cm3/1000s. : +- 19.0

### LOW IDLE

Delivery for standard plunger/barrel assemblies.

Zero delivery for shutoff assemblies (refer to cam sequence).

Rated speed rpm : 300

Rack travel in mm : 5.20 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 49.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. :  $\leftarrow$  6.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

c/n3/1000s. : 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.04.97 Test oil : ISO 4113

Combination No. : 0 402 840 302

Injection pump

Pump designation : PE12P12OA52OLS8507 EP type number : 0 412 820 201

Governor

Governer design. : RQV300...1050PA1039

: -4K

Governer no. : 0 421 815 498

Cust. part No. : 51.11103-7489

Customer—spec. information Customer : MAN

Motor : D 2842 LE 408

Power KW : 735.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Overflow quantity

min. l/h : 185 Tolerance l/h : + 15.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test Lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : ← 1.0

Prestroke mm : 6.45
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 13.00 Tolerance mm : + 0.50

Firing order : 12-1A- 5- 9A- 8

: - 3A- 4-11A- 10 : - 2A- 6

Phasing : 0-45-60-105-120

: -165-180-225-240

: -285-300-345

Tolerance : + 0.50

Check

tolerance \*NW : +- 0.75

### Start of delivery blocking

Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : +- 0.75

Barrel no. : 12

### BASIC SETTING

Rated speed rpm : 1050

	1	
Rack travel in mm	: 11.80	Rated speed rpm : 470
Tolerance mm	+ 0.05	guide sleeve
100101	1	travel mm : 3.89
Del. quantity		Tolerance mm : + 0.25
cm3/1000 strokes	: 275.0	roter drice min
CILDY 1000 SEFORES	· 273.0	Rated speed rpm : 1320
Toterance		guide sleeve
cm3/1000 strokes	: ← 1.0 I	travel mm : 13.50
CHO/ 1000 STYOKES	7	
Check tolerance		Tolerance mm : +- 0.50
cm3/1000s.	: +- 4.0	
CMS/ (COOS.	1 4.0	CUTE CLEDIE DOSTITALI
Connect		GUIDE SLEEVE POSITION
Spreed	†	
7-1	†	,
Tolerance	1	control lever
cm3/1000 strokes	: 8.0	position degree : - 1
		Rated speed rpm : 1185
Check tolerance	†	
cm3/1000s.	: 12.0	Rack travel in mm : 10.80
	+	Tolerance mm : +- 1.30
	+	
	+	
Rated speed rpm	: 300 +	FULL LOAD DELIVERY AT FULL LOAD STOP
	+	
Rack travel in mm	: 5.20 +	Rated speed rpm : 1050
Tolerance mm	: + 0.10 }	Aneroid pressure
Del. quantity	+	hPa : 1500
om3/1000 strokes	: 49.0	Del. quantity
Tolerance	1	cm3/1000 strokes : 275.0
cm3/1000 strokes	: ← 3.0 }	Tolerance
Check tolerance	1	cm3/1000 strokes : +- 1.0
cm3/1000s.	: +- 8.0	Check tolerance
Spreed	1	cm3/1000s. : +- 4.0
Tolerance	1	Spreed
cm3/1000 strokes	. 80 1	Tolerance
Check tolerance	. 0.0	cm3/1000 strokes : 8.0
cm3/1000s.	: 12.0	Check tolerance
CH27 10005.	12.0	cm3/1000s. : 12.0
	I	. 12.0
(B) SETTING OF IN	IECTION DIMP ${f I}$	
WITH GOVERNOR	T I TOUR PORT	
MILLI GOVERNOR	Ι	CONTROL LEVER
		CONTROL LEVER
GUIDE SLEEVE TRAV	T	control lever
COINE SPEEAE IKWA	T T	position degree : 119.0
Dated speed and	: 1122	
Rated speed rpm	1122	tolerance degree : +- 4.0
guide sleeve	10.50	DATEN COEFN
travel mm	: 10.59	RATED SPEED
Tolerance mm	: +- 0.15	rack travel mm : 10.80
Date of the second	. 700	Rated speed rpm : 1115
Rated speed rom	: 300	Tolerance 1/min : + 5
guide sleeve	†	
travel mm	: 1.61	rack travel mm : 4.00
Tolerance mm	: <b>←</b> 0.20 +	Rated speed rpm : 1185
	+	Tolerance 1/min : + 15
Rated speed rpm	: 768 +	
guide sleeve	+	rack travel mm : 0.50
travel mm	: 6.62	Tolerance mm : +- 0.50
Tolerance mm	: ← 0.25 +	Rated speed rpm : 1300
	•	·

### LOW IDLE

control lever

position degree : 72.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.00

Testing:

Rated speed rpm : 300 rack travel mm : 5.20 Tolerance mm : + 0.10

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 1050 rack travel rm : 11.80 Tolerance rm : + 0.05

Rated speed rpm : 800 rack travel mm : 11.15 Tolerance mm : + 0.10

Rated speed rpm : 650 rack travel mm : 10.35 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 6.30 Tolerance mm : + 0.10

Rated speed rpm : 500 rack travel mm : 7.40 Tolerance mm : +- 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 1000
Pressure hPa : 1500
rack travel mm : 11.80
Tolerance mm : + 0.05

Rated speed rpm : 1000

Pressure hPa : rack travel mm : 7.75
Tolerance mm : + 0.15

**MEASUREMENT** 

Rated speed rpm : 1000

Fressure hPa : 300 rack travel mm : 8.15 Tolerance mm : + 0.05

Pressure hPa : 900 rack travel mm : 10.85 Tolerance mm : + 0.15

Start interlock

Rated speed rpm : > 100 Rated speed rpm : < 220

Check

speed 1/min : > 80

Check

speed 1/min : < 240

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 800 Del. quantity

cm3/1000 strokes : 275.0

Tolerance

cm3/1000 strokes : +- 3.0 Check tolerance

cm3/1000s. :  $\leftarrow$  6.0

Aneroid pressure

hPa : 1500 Rated speed rpm : 650 Del. quantity

cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes : + 3.0 Check tolerance

cm3/1000s. : +- 6.0

Delivery for shutoff assemblies (refer to cam sequence). Arbitrary delivery for standard plunger barrel assemblies.

Aneroid pressure

hPa : -

Rated speed rpm	:	200
Del. quantity cm3/1000 strokes	:	0.1
Tolerance		
cm3/1000 strokes	: +-	- 0.1
Check tolerance cm3/1000S.	: +	- 0.1

Delivery for shutoff assemblies (refer to cam sequence).
Arbitrary delivery for standard plunger barrel assemblies.

Aneroid pressure		
hPa	:	
Rated speed rpm	:	500
Del. quantity		
cm3/1000 strokes	:	165.0
Tolerance		4
cm3/1000 strokes	: +	- 15.0
Check tolerance		45.0
cm3/1000S.	+	- 15.0

Aneroid pressure			
hPa	:		_
Rated speed rpm	:		500
Del. quantity cm3/1000 strokes	_		105.0
	:		185.0
Tolerance			
cm3/1000 strokes	:	+	1.0
Check tolerance			
cm3/1000s.	•	+-	4.0
Spreed			
Tolerance			
cm3/1000 strokes	•		8.0
Check tolerance	•		0.0
cm3/1000S.			42.0
CMS/ (UUUS.	:		12.0

# STARTING FUEL DELIVERY

Rated speed rpm rack travel mm Tolerance mm	:	+-	100 20.50 0.50
Del. quantity cm3/1000 strokes Tolerance	:	·	135.0
cm3/1000 strokes Check tolerance	:	+-	15.0
cm3/1000s.	:	+-	19.0

LOW IDLE

Delivery for standard plunger/barrel

assemblies.

Zero delivery for shutoff assemblies (refer to cam sequence).

Rated speed rpm	:	300	
Rack travel in mm Tolerance mm Del. quantity	: +-	5.20 0.10	
cm3/1000 strokes	:	49.0	
Tolerance cm3/1000 strokes	: +-	3.0	
Check tolerance cm3/1000s. Spreed	: +-	8.0	
Tolerance cm3/1000 strokes	:	8.0	
Check tolerance cm3/1000s.	:	12.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 13.03.97 Edition : 13.03.97 Test oil : ISO 4113

Combination No. : 0 402 845 063

Injection bump

Pump designation : PE6P120A320RS8024-1

EP type number : 0 412 826 029

Governor

Governer design. : RQV250...1100PA1072

: -5K

Governer no. : 0 421 815 977

Cust. part No. : 477952-P05 v. 11.95

Customer-spec. information

Customer : VOLVO-TRUCK
Motor : TD74 EU
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40

temp. \*C Tolerance \*C

Overflow valve : 2 417 413 089

Inlet press. bar : 2.5 Tolerance bar : ← 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 008

x length mm : 600

Outside diameter : 6.0

2.0

x inside diameter :

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : → 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 7.60

Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.30 Tolerance

Check

: +- 0.75 tolerance \*NW

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm: 13.60 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 211.0

Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 2.97
	+ Tolerance mm : + 0.25
Check tolerance	<b>+</b>
cm3/1000s. : + 4.0	Rated speed rpm : 390
	guide sleeve
Spreed	travel mm : 3.22
opt ead	Toloropa po + 0.25
Tal	Tolerance mm : + 0.25
Tolerance	†
cm3/1000 strokes : 8.0	+ Rated speed rpm : 1390
	+ guide sleeve
Check tolerance	+ travel mm : 13.50
cm3/1000s. : 11.0	+ Tolerance mm : + 0.50
	1
	- GUIDE SLEEVE POSITION
Rated speed rpm : 300	
indea abada i biii	1
Rack travel in mm : 4.80	- control lever
Tolerance mm : +- 0.10	
	position degree : - 1
Del. quantity	+ Rated speed rpm : 1290
cm3/1000 strokes : 23.0	†
Tolerance	Rack travel in mm: 7.50
cm3/1 <b>000</b> strokes : +- 2.5	+ Tolerance mm : + 2.50
Check tolerance	+
cm3/1000s. : + 5.0	
Spreed	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	1
cm3/1000 strokes : 5.0	Rated speed rpm : 1100
Check tolerance	+ Aneroid pressure
cm3/1000s. : 8.0	+ hPa : 1500
CHO/ 10003 0.0	
	+ Del. quantity
AND ARTHUR AR THURSTAN MUMB	+ cm3/1000 strokes : 211.0
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : +- 1.0
	+ Check tolerance
	+  cm3/1000s. + 4.0
GUIDE SLEEVE TRAVEL	+ Spreed
	+ Tolerance
Rated speed rpm : 1176	+ cm3/1000 strokes : 8.0
guide sleeve	+ Check tolerance
travel mm : 10.15	+ cm3/1000s. : 11.0
Tolerance mm : + 0.25	
ंच्युणा व्यवस्थाता है भारति	1
Rated speed rpm : 250	
guide sleeve	I CONTROL LEVER
travel m : 1.33	T CONTROL LEVER
	T and all laves
Tolerance mm : + 0.25	+ control lever
	position degree : 68.0
Rated speed rpm : 733	tolerance degree : + 4.0
guide sleeve	†
travel mm : 5.39	+ control lever
Tolerance mm : + 0.25	position degree : 120.0
	+ tolerance degree : + 4.0
Rated speed rpm : 307	+
guide sleeve	RATED SPEED
travel mm : 2.29	rack travel mm : 12.60
Tolerance mm : + 0.25	Rated speed rpm : 1135
iofcimice that the control of the co	Tolerance 1/min : + 5
Rated speed rpm : 357	TOCCT GIVE 17 III 11
Rated speed rpm : 357	Т

rack travel mm : 4,00 Rated speed rpm : 1230 Tolerance 1/min : + 15 rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1320 LOW IDLE control lever position degree : 72.0 tolerance degree : + 4.0 control lever position degree : tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rom : 200 CRT mm min. : > 6.70 Testing: Rated speed rpm : 3 300 rack travel mm 4.80 : + - 0.10Tolerance mm Rated speed rpm : 375 TORQUE CONTROL 1100 Rated speed rpm : rack travel mm : 13.60 : +- 0.05 Tolerance mm Rated speed rpm : 650 rack travel mm : 13.10 Tolerance mm : +- 0.10 Rated speed rpm : 300 rack travel mm : 11.50 Tolerance mm : + 0.30 ANEROID/ALTITUDE COMPENSATOR TEST SETTING

Tolerance mm :  $\leftarrow$  0.10 Rated speed rpm : 1100 Pressure hPa 7.75 rack travel mm Tolerance mm: + 0.10 MEASUREMENT Rated speed rpm : 1100 Pressure hPa : 885 rack travel mm 5.50 : +- 0.20 Tolerance mm Pressure hPa : 190 rack travel mm : 0.2 0.25 Tolorance mn:  $\leftarrow$  0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure : 1500 hPa Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 243.0 Tolerance cm3/1000 strokes :  $\leftarrow$  2.5 Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000 strokes : 10.0 Check tolerance cm3/1000s. 14.0 Aneroid pressure Rated speed rpm : 650 Del. quantity cm3/1000 strokes : 115.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0

## LOW IDLE

Rated speed rpm : 300

Rack travel in mm: 4.80

Rated speed rpm :

Pressure hPa : 1500 rack travel nm : 13.60

1100

Tolerance mm	: +-	0.10
Del. quantity cm3/1000 strokes	:	23.0
Tolerance cm3/1000 strokes Check tolerance	: +-	2.5
cm3/1000s. Spreed	: +-	5.0
Tolerance cm3/1000 strokes	:	5.0
Check tolerance cm3/1000s.	:	8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 20.09.95 Test oil : 180 4113

Combination No. : 0 402 846 068

Injection pump

Pump designation : PE6P110A320RS8036 EP type number : 0 412 816 012

Governor

Governer design. : RQV300...1200PA1043

: -2

Governer no. : 0 421 814 155

Cust. part No. : 11030951

: -P02 v.09.95

Customer-spec. information Customer : VME

: TD73KCE Motor Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 Tolerance bar : + 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 3.85 : + 0.05 Tolerance mm

Check

tolerance mm : +-0.40

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 Tolerance : +- 0.50

Check

tolerance \*NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 11.80 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 198.0

M27

Tolerance	† guide sleeve
cm3/1000 strokes : +- 1.0	travel mm : 2.45
	+ Tolerance mm : + 0.25
Check tolerance	1 10001 arroe (111)
cm3/1000s. : + 3.0	Rated speed rpm : 520
CM3/10003. ; + 3.0	
	† guide sleeve
Spreed	† travel mm : 3.04
	+ Tolerance mm : +- 0.25
Tolerance	<del> </del>
cm3/1 <b>000</b> strokes : 7.0	+ Rated speed rpm : 1550
	guide sleeve
Check tolerance	+ travel mm : 11.50
cm3/1000s. : 11.0	Tolerance mm : +- 0.50
CIRD/ 10005. : 11.0	T Toterance mm : += 0.30
**************************************	<u>†</u>
	+ GUIDE SLEEVE POSITION
Rated speed rpm : 300	<del>†</del>
	<del>†</del>
Rack travel in mm : 4.50	+ control lever
Tolerance mm : + 0.10	+ position degree : - 1
Del. quantity	+ Rated speed rpm : 1285
cm3/1000 strokes : 24.0	
Tolerance	Rack travel in mm: 16.50
cm3/1000 strokes : +- 2.0	+ Tolerance mm : + 2.00
Check tolerance	Toterance min : T 2.00
	<b>T</b>
$cm3/1000s.$ : $\leftarrow$ 5.0	
Spreed	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	<b>†</b>
cm3/1000 strokes : 5.0	+ Rated speed rpm : 700
Check tolerance	+ Aneroid pressure
cm3/1000s. : 8.0	+ hPa : 1500
	+ Del. quantity
	+ cm3/1000 strokes : 198.0
(B) SETTING OF INJECTION PUMP	+ Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : +- 1.0
WITH GOVENHOR	- Check tolerance
	+ cm3/1000s. : $+$ 3.0
GUIDE SLEEVE TRAVEL	+ Spreed
	+ Tolerance
Rated speed rpm : 1256	+ cm3/1000 strokes : 7.0
guide sleeve	+ Check tolerance
travel mm : 8.24	+ cm3/1000s. : 11.0
Tolerance mm : + 0.25	+
	+
Rated speed rpm : 300	
guide sleeve	+ CONTROL LEVER
travel mm : 1.19	T TOTAL PEACE
	I control leven
Tolerance mm : + 0.25	+ control lever
n	position degree : 47.0
Rated speed rpm : 857	tolerance degree : +- 4.0
guide sleeve	†
travel mm : 5.21	+ control lever
Tolerance mm : + 0.25	+ position degree : 115.0
	+ tolerance degree : + 4.0
Rated speed rpm : 385	+
guide steeve	+ RATED SPEED
travel ma : 1.98	rack travel mm : 10.80
Tolonomo om 1.70	
Tolerance mm : + 0.25	+ Rated speed rpm : 1245
	+ Tolerance 1/min : + 5
Rated speed rpm : 435	+

rack travel mm Rated speed rpm Tolerance 1/min	: 1350
rack travel mm Tolerance mm Rated speed rpm	: +- 0.50
LOW IDLE	
control lever position degree tolerance degree	: 80.0 : +- 4.0
control lever position degree tolerance degree	: 14.0 : +- 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 200
CRT mmm min.	: > 6.60
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 4.50 : +- 0.10
Rated speed rpm	: 340
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 11.80 : +- 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 11.80 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 7.80 : + 0.10

Rated speed rpm	:	500	
Pressure hPa	:	880	
rack travel mm	:	3.60	
Tolerance mm	: +	- 0.20	
Pressure hPa	:	240	
rack travel mm	:	0.25	
Tolerance mm	: +	- 0.05	
FUEL DELIVERY CHA	RACT	ERISTICS	
	RACT	ERISTICS	_
Aneroid pressure	RACT	ERISTICS	
Aneroid pressure hPa Rated speed rpm	IRACT	ERISTICS - 700	_
Aneroid pressure hPa Rated speed rpm Del. quantity	RACT	- 700	-
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	RACT	_	
FUEL DELIVERY CHA Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	RACT	700 114.0	-
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	RACT	- 700	_
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: +	700 114.0	

LOW IDLE			
Rated speed rpm	:		300
Rack travel in mm			4.50
Tolerance mm	:	+	0.10
Del. quantity cm3/1000 strokes			24.0
Tolerance	•		24.0
cm3/1000 strokes	:	+-	2.0
Check tolerance cm3/1000s.	_		5.0
Spreed	•	<del></del>	5.0
Tolerance			
cm3/1000 strokes	:		5.0
Check tolerance cm3/1000s.			8.0

End of test specification sheet

MEASUREMENT

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 14.10.96 : ISO 4113

Combination No. : 0 402 846 075

Injection pump

Pump designation : PE6P110A320RS8042 EP type number : 0 412 816 013

Governor

Governer design. : RQV300...1050PA1183

: -1

Governer no.

: D 421 814 159

Cust. part No. : 11032711

: -P01 V.08/96

Customer-spec. information

Customer : VCE

Motor

: TD 73 KDE

Power KW

: 153.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 078

Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

her

: 208.5

Tolerance bar

: **←** 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.85
Tolerance mm : + 0.05 Tolerance mm

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 11.00

Tolerance mm :  $\leftarrow$  0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.30

Check

tolerance 'NW : **←** 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 10.90

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 178.0

**NO2** 

Tolerance		
cm3/1000 strokes	: +- 1.0	† !
Chis/ 1000 Strokes	: +- 1.0	_ ‡
Check tolerance	7.0	+
cm3/1000s.	: +- 3.0	# 1
Spreed		- I '
		+
Tolerance cm3/1000 strokes	: 7.0	†
CIID/ 1000 SCIOKES	. 7.0	‡ !
Check tolerance		<del>-</del> +
cm3/1000S.	: 11.0	‡ !
		- I
		+
Rated speed rpm	: 300	†
Rack travel in mm	: 4.50	1
Tolerance ism	: ← 0.30	+ ,
Del. quantity cm3/1000 strokes	: 24.0	+
Tolerance	: 24.0	‡
cm3/1000 strokes	: <b>←</b> 2.5	+
Check tolerance		t
cm3/1000s. Spreed	: +- 5.0	‡
Tolerance		+
cm3/1000 strokes	: 5.0	+
		+
Check tolerance cm3/1000s.	: 8.0	
cm3/1000s.	: 8.0	+
cm3/1000s.		+
		+
cm3/1000s.  (B) SETTING OF IN		+ + + +
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR	JECTION PUMP	+++++++++++++++++++++++++++++++++++++++
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV	JECTION PUMP	+++++++++++++++++++++++++++++++++++++++
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm	JECTION PUMP	+++++++++++++++++++++++++++++++++++++++
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve	JECTION PUMP	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm	JECTION PUMP  EL  : 1107	**************************************
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm	JECTION PUMP  EL : 1107 : 7.86 : + 0.15	+++++++++++++++++++++++++++++++++++++++
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm	JECTION PUMP  EL : 1107 : 7.86	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm	JECTION PUMP  EL : 1107 : 7.86 : + 0.15 : 300 : 1.17	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve	JECTION PUMP  EL : 1107 : 7.86 : ← 0.15 : 300	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm	JECTION PUMP  EL : 1107 : 7.86 : + 0.15 : 300 : 1.17 : + 0.20	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	JECTION PUMP  EL : 1107 : 7.86 : + 0.15 : 300 : 1.17 : + 0.20 : 804	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Tolerance mm  Rated speed rpm guide sleeve travel mm  Rated speed rpm guide sleeve travel mm	JECTION PUMP  EL : 1107 : 7.86 : + 0.15 : 300 : 1.17 : + 0.20 : 804 : 5.19	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve	JECTION PUMP  EL : 1107 : 7.86 : + 0.15 : 300 : 1.17 : + 0.20 : 804	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	JECTION PUMP  EL : 1107 : 7.86 : + 0.15 : 300 : 1.17 : + 0.20 : 804 : 5.19	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	EL: 1107: 7.86: + 0.15: 300: 1.17: + 0.20: 804: 5.19: + 0.25: 530	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm Tolerance mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Tolerance mm Rated speed rpm guide sleeve travel mm Rated speed rpm guide sleeve travel mm Rated speed rpm guide sleeve travel mm	JECTION PUMP  EL : 1107 : 7.86 : + 0.15 : 300 : 1.17 : + 0.20 : 804 : 5.19 : + 0.25 : 530 : 3.11	
cm3/1000s.  (B) SETTING OF INWITH GOVERNOR  GUIDE SLEEVE TRAV  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve	EL: 1107: 7.86: + 0.15: 300: 1.17: + 0.20: 804: 5.19: + 0.25: 530	

ide sleeve avel mm : 11.50 lerance mm : + 0.50 IDE SLEEVE POSITION ntrol lever sition degree : - 1 ted speed rpm : 1259 ck travel in mm : 9.80 lerance mm : + 1.30 LL LOAD DELIVERY AT FULL LOAD STOP ted speed rpm : 700 eroid pressure : 1500 l. quantity 3/100G strokes : 178.0 Lerance 3/1000 strokes : + 1.0eck tolerance 3/1000s. : +- 3.0 reed Lerance 3/1000 strokes : 7.0 eck tolerance 3/**1000**s. : 11.0 NTROL LEVER ntrol lever sition degree : 45.0 lerance degree : +- 4.0 ntrol lever sition degree : 112.0 lerance degree : + 4.0 TED SPEED ck travel mm : 9.90 ted speed rpm : 1095 lerance 1/min : +ck travel mm : 4.00 ted speed rpm : 1175 Lerance 1/min : +- 15 ck travel mm : 0.50 lerance mm : +- 0.50 ted speed rpm : 1300

LOW IDLE

control lever

position degree : 82.0 tolerance degree : +- 4.0

control lever

position degree : 16.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 300 rack travel mm : 4.50 Tolerance mm : + 0.30

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700 rack travel mm : 10.90 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 10.90
Tolerance mm : +- 0.05

Rated speed rpm : 500
Pressure hPa : rack travel mm : 8.00
Tolerance mm : +- 0.10

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 710 rack travel mm : 2.60 Tolerance mm : +- 0.20

Pressure hPa : 270 rack travel mma : 0.25

Tolerance mm : +- 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

nFa : Rated speed rpm : 700

Del. quantity

cm3/1000 strokes : 117.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm: 4.50Tolerance mm:  $\leftarrow 0.30$ 

Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 strokes : +- 2.5 Check tolerance

omZ/1000c

cm3/1000s. : +- 5.0 Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 8.0

### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.97 Test oil : ISO 4113

Combination No. : 0 402 846 076

Injection pump

Pump designation : PE6P120A320RS8043 EP type number : 0 412 826 035

Governor

Governer design. : RQV300...1100PA1248

Governer no. : 0 421 814 165

Cust. part No. : 11031330

: -P02 v.03.97

Customer-spec. information

Customer : VCE

Motor : TD 103 KBE Power KW : 216.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 25.0 Tolerance bar : + 1.0

Prestroke mm : 4.25 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mma : 11.00 Tolerance mma : + 1.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.30

Tolerance mma : +- 0.05

_	
Del. quantity cm3/1000 strokes : 270.0	Tolerance mm : + 0.25
Tolerance	Rated speed rpm : 1370 guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 11.50 + Tolerance mm : + 0.50
Check tolerance cm3/1000s. : + 4.0	
Spreed	GUIDE SLEEVE POSITION
Talamana	T
Tolerance cm3/1000 strokes : 8.0	control lever position degree : - 1
Check tolerance	Rated speed rpm : 1240
cm3/1000s. : 11.0	Rack travel in mm : 11.30
	Tolerance mm : + 1.50
Rated speed rpm : 330	FULL LOAD DELIVERY AT FULL LOAD STOP
<b>5</b> 1 5 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	†
Rack travel in mm : 4.00 Tolerance mm : + 0.10	+ Rated speed rpm : 700 + Aneroid pressure
Del. quantity	+ hPa : 1500
cm3/1000 strokes : 29.0	- Del. quantity
Tolerance	+ cm3/1000 strokes : 270.0
cm3/1000 strokes : + 2.5	+ Tolerance
Check tolerance	+ cm3/1000 strokes : + 1.0
cm3/1000s. : +- 5.0 Spreed	+ Check tolerance - cm3/1000s. : +- 4.0
Tolerance	Spreed
cm3/1000 strokes : 5.0	Tolerance
Check tolerance	+ cm3/1000 strokes : 8.0
cm3/1000s. : 8.0	+ Check tolerance
	t cm3/1000s. : 11.0
(B) SETTING OF INJECTION PUMP	1
WITH GOVERNOR	
	+ CONTROL LEVER
GUIDE SLEEVE TRAVEL	t control lever
GOIDE SLEEVE TRAVEL	position degree : 60.0
Rated speed rpm : 1140	tolerance degree : + 4.0
guide sleeve	+
travel mm : 7.71	+ control lever
Tolerance mm : + 0.15	position degree : 115.0
Rated speed rpm : 330	tolerance degree : +- 4.0
guide steeve	+ RATED SPEED
travel mm : 2.10	+ rack travel mm : 11.30
Tolerance mm : + 0.20	+ Rated speed rpm : 1130 + Tolerance 1/min : +- 5
Rated speed rpm : 1080	T TOTE WITH . The 3
guide sleeve	rack travel mm : 4.00
travel mm : 6.80	Rated speed rpm : 1220
Tolerance mm : + 0.25	Tolerance 1/min : +- 15
Rated speed rpm : 520	rack travel mm : 0.50
Rated speed rpm : 520 guide sleeve	+ Tolerance mm : +- 0.50
travel ma : 4.67	Rated speed rpm : 1275

### LOW IDLE

control lever

position degree : 65.0 tolerance degree : +- 4.0

control lever

position degree : 14.0 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 230

CRT mm min. :>6.00

Testing:

330 Rated speed rpm rack travel mm : 4.00 Tolerance mm : **←** 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 700 12.30 rack travel mm Tolerance ma:  $\leftarrow 0.05$ 

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm 500 Pressure hPa : 1500 rack travel mm : 12.30 Tolerance non : **←** 0.05

500 Rated speed rom Pressure hPa rack travel mm 9.70

Tolerance mm : + 0.20

**MEASUREMENT** 

Rated speed rpm : 500

550 Pressure hPa 2.20 rack travel mm : Tolerance mm : + 0.20

: 230 : 0.25 Pressure hPa rack travel mm : +- 0.05 Tolerance mm

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

700 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 202.0 Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s. : +- 4.0

LOW IDLE

Rated speed rpm : 330

Rack travel in mm : 4.00 Tolerance  $max : \leftarrow 0.10$ Del. quantity cm3/1000 strokes : 29.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.5 Check tolerance cm3/1000s.

· +--

5.0

Spreed

Tolerance cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 19,12,96 Edition Test oil : 19.72.96

Combination No. : 0 402 846 077

Injection pump

Pump designation : PE6P120A320RS8043 EP type number : 0 412 826 035

Governor

Governer design. : RQV300...1050PA1247

Governer no. : 0 421 814 163

Cust. part No. : 11031331-P02v.11.96

Customer-spec, information

Customer : VCE
Motor : TD 103 KCE
Power K₩ : 189.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5 Tolerance bar : ← 0.1

Overflow quantity

min. l/h : 205
Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.25 Tolerance mm : ← 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm : 11.00 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance \*NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.90

Tolerance mm : + 0.05	‡ guide sleeve
	+ travel mm : 3.11
Del. quantity	+ Tolerance mm : + 0.25
cm3/1000 strokes : 322.0	+
	+ Rated speed rpm : 1400
Tolerance	+ guide sleeve
cm3/1000 strokes : + 1.0	+ travel mm : 11.50
	+ Tolerance mm : + 0.50
Check tolerance	+
cm3/1000s. : +- 4.0	
	+ GUIDE SLEEVE POSITION
Spreed	+
	+
Tolerance	+ control lever
cm3/1000 strokes : 8.0	position degree : - 1
	+ Rated speed rpm : 1250
Check tolerance	+
cm3/1000s. : 11.0	+ Rack travel in mm : 10.50
	+ Tolerance mm : +- 2.00
	+
Rated speed rpm : 320	+ FULL LOAD DELIVERY AT FULL LOAD STOP
	+
Rack travel in mma: 4.60	+ Reted speed rpm : 500
Tolerance iam : + 0.10	+ Aneroid pressure
Del. quantity	+ hPa : 1500
cm3/1000 strokes : 50.0	† Dei. quentity
Tolerance	+ cm3/1000 strokes : 322.0
cm3/1000 strokes : + 2.5	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000s. $: \leftarrow 5.0$	+ Check tolerance
Spreed	+  cm3/1000s. : + 4.0
Tolerance	+ Spreed
cm3/1000 strokes : 5.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : 8.0
cm3/1000s. : 8.0	+ Check tolerance
	+ cm3/1000s. : 11.0
(*) 0555110 05 31110371011 0110	†
(B) SETTING OF INJECTION PUMP	†
WITH GOVERNOR	CONTROL LEVER
	T CONTROL LEVER
GUIDE SLEEVE TRAVEL	- control lever
COINE OFFERE INVAFE	position degree : 45.0
Rated speed rpm : 1102	tolerance degree : + 4.0
guide sleeve	toter arise degree 4.0
travel mm : 7.80	control lever
Tolerance mm : + 0.15	position degree : 110.0
Occiding the Color	tolerance degree : +- 4.0
Rated speed rpm : 320	T total and degree . 4.5
guide sleeve	RATED SPEED
travel mm : 1.34	rack travel mm : 10.80
Tolerance mm : + 0.20	Rated speed rpm : 1090
COTOL MINE 1 . OFFI	Tolerance 1/min : +- 5
Rated speed rpm : 802	4
guide sleeve	rack travel mm : 4.00
travel mm : 5.18	Rated speed rpm : 1190
Tolerance mm : + 0.25	Tolerance 1/min : + 15
1001 m 100 mm	To but with the second
Rated speed rpm : 530	rack travel mm : 0.50
THE POST OF THE PO	,

N09

Tolerance mm	: ← 0.50	+ Tolerance mm	: +- 0.2
Rated speed rpm	: 1250	+ MEASUREMENT	
		+ Rated speed rpm	: 500
LOW IDLE		- + Pressure hPa	: 970
		rack travel mm	
		† Tolerance mm	: ← 0.2
ontrol lever osition degree	• 82 N	+ Pressure hPa	: 230
olerance degree		rack travel mm	
-		Tolerance mm	: +- 0.0
untral lever	: 18.0	†	
osition degree olerance degree		I	
_		FUEL DELIVERY CH	ARACTERISTI
Setting point w/o	ut bumper spring		
Rated speed rpm	: 220	Aneroid pressure	: 1500
RT mm min.	: > 7.40	hPa Rated speed rpm	
	• • • • • • • • • • • • • • • • • • • •	+ Del. quantity	
Testing:		+ cm3/1000 strokes	: 224.
Rated speed rpm	• 320	Tolerance cm3/1000 strokes	۰ ــــ 1
rack travel mm		+ Check tolerance	; <del>- </del>
Folerance mm	: +- 0.10	cm3/1000s.	: +- 4.
ated speed rpm	: 380		
		Aneroid pressure	
ORQUE CONTROL		- hPa Rated speed rpm	: 500
ated speed rpm	: 500	+ Del. quantity	. 500
ack travel mm	: 12.90	+ cm3/1000 strokes	: 212.
rolerance mm	: <b>←</b> 0.05	Tolerance	•
Pated anodd man	: 1050	cm3/1000 strokes Check tolerance	: +- 1.
Rated speed rpm rack travel mm	: 11.80	+ cm3/1000s.	: +- 4.
Tolerance mm	: + 0.10	+ 10000.	* * **
	. 720	†	
Rated speed rpm rack travel mm		Ī	
Folerance mm	· + 0.15	1	
		- + LOW IDLE	
ANEROID/ALTITUDE		Rated speed rpm	: 320
ON BIOMION IEO		- Noted Speed (pi)	
		+ Rack travel in m	
SETTING		Tolerance mm	: +- 0.1
Rated speed rpm	: 500	+ Del. quantity + cm3/1000 strokes	: 50.
Pressure hPa	: 1500	+ Tolerance	
rack travel mm	: 12.90	cm3/1000 strokes	: <del>←</del> 2.
	: +- 0.05	+ Check tolerance	-
Tolerance mm			_
	• 500	+ cm3/1000s.	: +- 5.
Tolerance mm Rated speed rpm Pressure hPa	: 500	+ cm3/1000S. + Spreed + Tolerance	: +- 5.

N10

rpm : 500 Pa: 970 .mm: 2.90 mm: : + 0.20 ra : 230 mm : 0.25 mm : + 0.05 RY CHARACTERISTICS ssure : 1500 rpm : 1050 ty rokes : 224.0 rokes :  $\leftarrow$  1.0 ance : +- 4.0 ssure : -1 rpm : 500 ty rokes : 212.0 rokes : + 1.0 ance : +- 4.0 rpm : 320 in mm: 4.60 m : + 0.10 ty rokes : 50.0 rokes :  $\leftarrow$  2.5 ance : +- 5.0 rokes: 5.0

Check tolerance cm3/1000s.	:	8.0	

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 24.04.97 Test oil

Combination No. : 0 402 848 300

Injection pump

Pump designation : PE8P120A520LS8518 EP type number : 0 412 828 201

Sovernor

Governer design. : RQV300...1150PA1323K Governer no. : 0 421 815 963

Cust. part No. : 51.11103-7492

Customer-spec. information

Customer : MAN

Motor : D 2848 LE 403 Power KW : 583.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 078

Inlet press. bar : 2.5 Tolerance bar : ← 0.1

Overflow quantity min. L/h : 170 Tolerance L/h : + 15.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

N12

Test Lines : 1 680 750 089

Outside diameter: 8.0

x inside diameter:

3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : + 1.0

Prestroke mm : 5.65 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 13.00

Tolerance ma:  $\leftarrow$  0.50

Firing order : 8-7A- 2- 6A- 3

: - 5A- 4

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance

: +- 0.50

Check

tolerance \*NW

: +- 0.75

Start of delivery blocking

Tolerance : + 0.10

Check

tolerance \*NW : +- 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.00

Tolerance  $m_0$ :  $\leftarrow 0.05$ 

Del. quantity cm3/1000 strokes	: 335.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s.	: + 4.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Rated speed rpm	: 300
Rack travel in mm	5.20
Tolerance mm	: +- 0.10
Del. quantity cm3/1000 strokes	: 49.0
Tolerance	
cm3/1000 strokes Check tolerance	: <b>←</b> 3.0
cm3/1000s.	: ÷- 8.0
Spreed Tolerance	
cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP
GUIDE SLEEVE TRAV	EL
Rated speed rpm	: 1206
guide sleeve travel mm	: 9.84
Tolerance mm	: 9.84 : + 0.15
Rated speed rpm	: 300
guide steeve	. 1 (1
travel mm Tolerance mm	: 1.61 : ← 0.20
Rated speed rpm	: 797
guide sleeve	. ( 7/
travel mm Tolerance mm	: 6.36 : +- 0.25
Rated speed rpm	: 460

guide sleeve travel mm : 3.78 Tolerance mm : +- 0.25  Rated speed rpm : 1500 guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50  GUIDE SLEEVE POSITION  Rated speed rpm : 1323  Rack travel in mm : 13.00 Tolerance mm : +- 1.30
1000 and and 100
FULL LOAD DELIVERY AT FULL LOAD STOP
Rated speed rpm : 1150 Aneroid pressure
hPa : 2000
Del. quantity cm3/1000 strokes : 335.0
Tolerance cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s. : +- 4.0
Spreed Tolerance
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0
Cm5/10005. : 12.0
CONTROL LEVER
control lever position degree : 118.0
tolerance degree : + 4.0
RATED SPEED rack travel mm : 13.00
Rated speed rpm : 1195
Tolerance 1/min : +- 5
rack travel mm : 4.00 Rated speed rpm : 1320
Tolerance 1/min : + 15
rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1475
LOW IDLE

control lever	• 72 በ
position degree tolerance degree	: + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 200
CRT mm min.	: > 7.39
Testing:	
Rated speed rpm rack travel mm	: 300
rack travel mm Tolerance mm	: 5.20 : +- 0.10
Office in	. + 0.10
Rated speed rom	: 332
TORQUE CONTROL	
Rated speed rpm rack travel mm	: 1150 : 14. <b>0</b> 0
Tolerance mm	: 14.00 : + 0.05
Rated speed rpm	: 1000
rack travel mm	: 13.10 : ← 0.10
Tolerance mm	
Rated speed rpm	: 850
rack travel mm Tolerance mm	: 12.00 : + 0.10
-	
Rated speed rpm rack travel mm	: 659 • 11.20
Tolerance mm	: + 0.10
Rated speed rpm	: 500
rack travel mm	: 6.30 : + 0.10
Tolerance mm	
Rated speed rpm rack travel mm	: 500 : 7.40
Toleranco mm	: + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm	: 1150
Pressure hPa	: 2000
rack travel mm Tolerance mm	: 14.00 : +- 0.05
-	
Rated speed rpm Pressure hPa	: 1150 : -

Tolerance mm	: 7.80 : + 0.15
MEASUREMENT	
Rated speed rpm	: 1150
Pressure hPa rack travel mm Tolerance mm	: 330 : 8.10 : + 0.05
Pressure hPa rack travel man Tolerance man	
Start interlock	
Rated speed rpm Rated speed rpm	: > 170 : < 230
Check speed 1/min Check	: > 150
speed 1/min	: < 240
FUEL DELIVERY CHAP	RACTERISTICS
Aneroid pressure	2000
Rated speed rpm Del. quantity cm3/1900 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 315.0
Rated speed rpm Del. quantity cm3/1900 strokes Tolerance cm3/1000 strokes Check tolerance	: 1000 : 315.0 : +- 4.0

Check tolerance cm3/1000s. : + 8.0

Delivery for shutoff assemblies (refer to cam sequence). Arbitrary delivery for standard plunger barrel assemblies.

Aneroid pressure

cm3/1000s.

hPa : Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 0.1
Tolerance
cm3/1000 strokes : + 0.1
Check tolerance

Delivery for shutoff assemblies (refer to cam sequence). Arbitrary delivery for standard plunger barrel assemblies.

0.1

Aneroid pressure

hPa : Rated speed rpm : 500
Del. quantity
cm3/1000 strokes : 165.0
Tolerance
cm3/1000 strokes : +- 15.0

Check tolerance cm3/1000s. : + 15.0

Aneroid pressure

hPa 500 Rated speed rpm : Del. quantity cm3/1000 strokes : 175.0 Tolerance cm3/1000 strokes : +-1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance 8.0 cm3/1000 strokes : Check tolerance 12.0 cm3/1000s.

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

LOW IDLE

Delivery for standard plunger/barrel assemblies.

Zero delivery for shutoff assemblies (refer to cam sequence).

Rated speed rpm : 300

Rack travel in mm: 5.20
Tolerance mm: : + 0.10
Del. quantity

cm3/1000 strokes : 49.0 Tolerance

cm3/1000 strokes : +- 3.0 Check tolerance

cm3/1000S. : +- 8.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

Note remarks

Refer to Service Info for test and adjustment instructions. Sec microcard(s) W400/...

Edition : 30.07.96 : ISO 4113 Test oil

Combination No. : 0 402 896 015

Injection pump

Pump designation : PE6P120A320RS8033 EP type number : 0 412 826 031

Governor

Governer design. : RE30

Governer no. : 0 421 890 027

: 425758 P04 v. 09/95 Cust. part No.

Customer-spec. information

: VOLVO-TRUCK Customer

: DH 10 A Motor Power KW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : **←** 2.0

Overflow valve : 2 417 413 073

Inlet press. bar : Tolerance bar : +-0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

208.5 bar : +- 1.5 Tolerance bar

: 1 680 750 008 Test lines

Outside diameter : 6.0 x inside diameter : 2.0 600 x length mm :

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

4.40 Prestroke mm : +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 0.50

Firing order : 1-5- 3- 6- 2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.30

Check

tolerance \*NW : +- 0.75

Start of delivery mark

Barrel no. : 1

(B) POSITIONER TESTING Warm-up time: 3 minutes at n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR

POSITION

Engine speed min-1:

Tolerance V : +/- 0.6 Setting point Check (P, R and H pump) tolerance V : +/- 1.20 3.100 Uact V Engine speed min-1: 600 CRT mm 13.00 Difference Tolerance mm : +/- 0.05 Amplitude to Check Amplitude V : max.1.4 : +/- 0.10 tolerance ma Check value (P, R and H pump) (C) INJECTION PUMP WITH POSITIONER TEST POINT V1 Uact V 1.700 : CRT mm 6.15 Rated speed rpm : 600 : +/- 0.25 Tolerance mm Uact V 2.800 Del. quantity cm3/1000 strokes : Check tolerance sim : +/- 0.30 295.0 Tolerance cm3/1000 strokes : +-1.0 Setting point Check tolerance cm3/1000s. (M pump) : +-4.0 Spreed 3.100 Uact V Tolerance 12.50 cm3/1000 strokes : CRT mm 8.0 Tolerance mm : +/- 0.05 Check tolerance cm3/1000S. Check 11.0 tolerance mm : +/- 0.10 FUEL DELIVERY CHARACTERISTICS Check value (arrua M) Rated speed rpm : 950 Uact V 2.800 : 1.700 Uact V Del. quantity cm3/1000 strokes : CRT man 5.50 252.0 : +/- 0.25 Tolerance mm Tolerance cm3/1000 strokes : +-Check 3.0 : +/- 0.30 Check tolerance tolerance mm cm3/1000s. 6.0 Stop position Spreed Tolerance : Value with cm3/1000 strokes : Uact V 10.0 deenergised adjusting magnet Check tolerance cm3/1000s. and control rod in 14.0 stop position. CRT mm 0.75 : +/- 0.25 950 Tolerance mm Rated speed rpm Check Uact V 2.200 tolerance mm : +/- 0.35 Del. quantity cm3/1000 strokes : 178.0 Tolerance ENGINE-SPEED SENSOR cm3/1000 strokes : +-3.0 Check tolerance (All P and R pumps not H and M pumps) cm3/1000s. : +-6.0 Test with control rod TEST POINT L1 in stop position 250 Rated speed rpm 1.470 Engine speed min-1: Uact V Amplitude V : 1.4 Tolerance Volt : +- 0.060

Check tolerance	
Volt	: +- 0.060
Del. quantity cm3/1000 strokes	: 21.0
Tolerance cm3/1000 strokes	: +- 3.0
Spreed Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance cm3/1000s.	: 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) V400/...

: 15.08.95 Edition : ISO 4113 Test oil

Combination No. : 0 402 896 017

Injection pump

Pump designation : PE6P120A320RS8035 EP type number : 0 412 826 033

Governor

Governer design. : RE30

Governer no. : 0 421 890 030

: 3825439-SK0EV. Cust. part No.

: -AUDIT

Customer-spec. information : PENTA Customer

: TAMD 72 P-A Moror

: 316.0 Power KW

TEST BENCH REQUIREMENTS

: 3.1 Inlet line

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

: 2 417 413 078 Overflow valve

Inlet press. bar : 2.5 Tolerance bar : +-

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

208.5 bar Tolerance bar

: 1 680 750 008 Test lines

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS

No basic setting.

Setting of constant delivery

under Section C.

BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar :  $\leftarrow$  1.0

4.05 Prestroke mm Tolerance mm : +- 0.05

Check

tolerance mm : **←** 0.10

Rack travel in mm: 10.50 Tolerance mm : **←** 0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Start of delivery mark

Barrel no. : 1

(B) POSITIONER TESTING Warm-up time: 3 minutes at

n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR

POSITION

Engine speed min-1:

Setting point

(P, R and H pump)	tolerance V : +/- 1.20
Uact V : 3.100 + 13.00 + Tolerance mm : +/- 0.05	Engine speed min-1: 600 Difference Amplitude to
Check +	Amplitude V : max.1.4
tolerance mm : +/- 0.10	
Check value (P, R and H pump)	(C) INJECTION PUMP WITH POSITIONER
+	TEST POINT V1
Uact V : 1.700	~
CRT mm : 6.15	Rated speed rpm : 600
Tolerance mm : +/- 0.25 +	Uact V : 2.800 Del. quantity
tolerance mm : +/- 0.30	cm3/1000 strokes : 305.0
Total remains 1. 47 - 0.30	Tolerance
1	cm3/1000 strokes : +- 1.0
Setting point	Check tolerance
(M pump)	$cm3/1000s.$ : $\leftarrow$ 4.0
<del>+</del>	Spreed
Uact V : 3.100 +	Tolerance
CRT mm : 12.50 +	cm3/1000 strokes : 8.0
Tolerance mm : +/- 0.05	Check tolerance
Check	cm3/1000s. : 11.0
tolerance mm : +/- 0.10	FUEL DELIVERY CHARACTERISTICS
Check value +	
(M pump) +	Rated speed rpm : 1300
+	Uact V : 2.600
Uact V : 1.700 +	Del. quantity
CRT mm : 5.50 +	cm3/1000 strokes : 215.0
Tolerance mm : +/- 0.25	Tolerance
Check tolerance mm : +/- 0.30 +	cm3/1000 strokes : + 3.0
toterance mm : +/- 0.50	Check tolerance cm3/1000s. : +- 6.0
Stop position	Spreed
J Desperation	Tolerance
Uact V : Value with	cm3/1000 strokes : 10.0
deenergised adjusting magnet	Check tolerance
and control rod in +	cm3/1000s. : 14.0
stop position.	
CRT mm : 0.75 +	
Tolerance mm : +/- 0.25 +	Rated speed rpm : 1000
Check	Uact V : 2.400
tolerance mm : +/- 0.35	Del. quantity cm3/1000 strokes : 208.0
I	Tolerance
ENGINE-SPEED SENSOR	cm3/1000 strokes : +- 3.0
(All P and R pumps not	Check tolerance
H and M pumps)	cm3/1000s. : +- 6.0
+	Spreed
Test with control rod	Tolerance cm3/1000 strokes : 10.0
in stop position	cm3/1000 strokes : 10.0 Check tolerance
Engine speed min-1: 60	cm3/1000S. : 14.0
Amplitude V: 1.4	(17.0
Tolerance V : +/- 0.6	
Check	Rated speed rpm : 800

Uact V	: 2.200
Del. quantity cm3/1000 strokes	: 191.0
Tolerance cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000s.	: +- 6.0
Spreed Tolerance cm3/1000 strokes	: 10.0
Check tolerance	
cm3/1000s.	: 14.0
TEST POINT L1	
Rated speed rom	: 275 : 1.600
Tolerance Volt Check tolerance	: <b>←</b> 0.060
Volt	: <b>←</b> 0.060
Del. quantity cm3/1000 strokes	: 88.0
Tolerance cm3/1000 strokes	: + 3.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 5.0
cm3/1000s.	: 8.0

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.07.97 : ISO 4113

Combination No. : 0 402 946 024A

Injection pump

Pump designation : PES6P120A720RS8045

EP type number : 0 412 926 028

Governor

Governer design. : RQ750PA1299 Governer no. : 0 421 801 810

Cust. part No. : 1588641 - Version A

Customer-spec. information Customer : SCANIA Motor : DSC1158A

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet temp. \*C : 40 Tolerance \*C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity

uverTlow quantity
min. l/h : 90
Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.30

Check

tolerance \*NW : + 0.75

Start of delivery blocking

Tolerance : + 0.10

Check

tolerance NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm	: 850	+ Tolerance mm : +- 0.25
Rack travel in m	m: 13.70	+ Rated speed rpm : 953 + guide sleeve
Tolerance mm	: +- 0.05	+ travel mm : 10.00
Del. quantity		+ Tolerance mm : + 0.25
cm3/1000 strokes	: 338.0	Rated speed rpm : 1010 guide sleeve
Tolerance		travel mm : 11.50
cm3/1000 strokes	: +- 1.0	Tolerance mm : + 0.50
Check tolerance cm3/1000s.	: + 10.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed		Rated speed rpm : 850 Aneroid pressure
Tolerance		+ hPa : 1500
cm3/1000 strokes	: 8.0	Del. quantity
		+ cm3/1000 strokes : 338.0
Check tolerance		+ Tolerance
cm3/1000s.	: 12.0	- cm3/1000 strokes : +- 1.0
······································	. ,2.0	- Check tolerance
		+ cm3/1000s. : 10.0
		Spreed
		Tolerance
Rack travel in m	m: 3.30	- cm3/1000 strokes : 8.0
Tolerance mm	: +- 0.20	+ Check tolerance
Del. quantity	. 70.0	+ cm3/1000s. : 12.0
cin3/1000 strokes	: 30.0	†
Tolerance		†
cm3/1000 strokes	: +- 4.0	
Check tolerance		+ CONTROL LEVER
cm3/1000s.	: +- 6.0	†
Spreed		+ control lever
Tolerance		+ position degree : 29.0
cm3/1000 strokes	: 5.0	tolerance degree : + 4.0
Check tolerance		†
cm3/1000S.	: 9.0	+ control lever
		position degree : 90.0
		+ tolerance degree : +- 4.0
(B) SETTING OF IN	NJECTION PUMP	‡
		+ ASSEMBLY GOVERNOR SETTING
		+
GUIDE SLEEVE TRAN	VEL	+ Rated speed rpm : 900
		+ rack travel mm : 12.70
Rated speed rpm	: 907	+
guide sleeve		Rated speed rpm : 936
travel mm	: 5.23	Tolerance 1/min : + 4
Tolerance mm	: +- 0.15	+ rack travel mm : 4.00
		+
Rated speed rpm	: 590	+ rack travel mm : 0.50
guide steeve		+ Tolerance mm : + 0.50
travel mm	: -9.42	+ Rated speed rpm : 1000
Tolerance mm		+
		1
Rated speed rpm	: 1010	Rated speed rpm : 901
guide sleeve		+ rack travel mm : 12.70
travel mm	: 18.06	TOOK CLOSEC MAIN . ILLIO
U. GICC IPE	. 10.00	ı

Rated speed rpm	: 937
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: ← 0.50
Rated speed rpm	: 1000
Rated speed rpm	: 902
rack travel mm	: 12.70
Rated speed rpm	938
Tolerance 1/min	+ 4
rack travel mm	+ 4.00
rack travel mm	: ← 0.50
Tolerance mm	: ← 0.50
Rated speed rpm	: 1000
Rated speed rpm rack travel mma	: 903 : 12.70
Rated speed rpm	: 939
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	0.50
Tolerance mm	- 0.50
Rated speed rpm	1000
Rated speed rpm	: 904
rack travel mm	: 12.70
Rated speed rpm	: 940
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1000
Rated speed rpm	: 905
rack travel mm	: 12.70
Rated speed rpm	: 941
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1000

: 13.70 : ← 0.05
: 500 : 1500 : 13.75 : ← 0.05
: 500 : - : 8.50 : + 0.20
: 500
: 320 : 9.80 : + 0.25
: 820 : 12.40 : + 0.05
RACTERISTICS
_
: 500
: 218.0
: <del>←</del> 1.0
: +- 6.0

TORQUE CONTROL
Rated speed rpm : 850

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 10.07.97 : ISO 4113

Combination No. : 0 402 946 026A

Injection pump

Pump designation : PES6P120A720RS8045 EP type number : 0 412 926 028

Governor

Governer design. : RQV350...1100PA1305K

Governer no. : 0 421 815 967

Cust. part No. : 1388631 - Version A

Customer-spec. information Customer : SCANIA : DSI1174M Motor

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 3.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 80 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 104 assembly

Opening pressure bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : - 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.30

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery blocking

Tolerance :  $\leftarrow$  0.10

Check

tolerance \*NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

		1
Rack travel in mm	1: 11.75	Rated speed rpm : 460
Tolerance mm	: <b>-</b> 0.05	+ guide sleeve
		+ travel mm : 4.07
Del. quantity		† Tolerance mm : + 0.25
cm3/1000 strokes	: 302.0	+
- 1		+ Rated speed rpm : 1400
Tolerance		+ guide sleeve
cm3/1000 strokes	: <b>←</b> 1.0	+ travel mm : 13.50 + Tolerance mm : + 0.50
Check tolerance		Toterance man : + 0.50
cm3/1000s.	: + 9.0	
		GUIDE SLEEVE POSITION
Spreed		+
-1		†
Tolerance cm3/1000 strokes	: 8.0	+ control lever
CMS/ 1000 Strokes	: 0.0	+ position degree : - 1 + Rated speed rpm : 1237
Check tolerance		T Rated speed (pill : 123)
cm3/1000s.	: 12.0	Rack travel in mm: 12.75
· · · · · · · · · · · · · · · · · · ·		+ Tolerance mm : + 1.30
		+
Debad aread par	: 350	FIRE LOAD DELTUSTRY AT STREET LOAD CTOD
Rated speed rpm	. 330	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	4.10	+ Rated speed rpm : 1100
Tolerance mm	: ← 0.30	+ Aneroid pressure
Del. quantity		+ hPa : 1500
cm3/1000 strokes	: 30.0	+ Del. quantity
Tolerance		+ cm3/1000 strokes : 302.0
cm3/1000 strokes	: <b>←</b> 3.0	+ Tolerance + cm3/1000 strokes : +- 1.0
Check tolerance cm3/1000s.	: ← 6.0	+ Check tolerance
Spreed		+ cm3/1000s, : + 9.0
Tolerance		Spreed
cm3/1000 strokes	: 4.0	+ Tolerance
Check tolerance		+ cm3/1000 strokes : 8.0
cm3/1000s.	: 8.0	+ Check tolerance
		+ cm3/1000s. : 12.0
(B) SETTING OF IN	HECTTON DUMP	Ī
WITH GOVERNOR	BECTION FORE	
42111 0010141011		+ CONTROL LEVER
		+
GUIDE SLEEVE TRAV	EL	+ control lever
<b>5 4 3 3 3 3 3 3 3 3 3 3</b>	. 4444	+ position degree : 65.0
Rated speed rpm	: 1166	tolerance degree : + 4.0
guide sleeve travel mm	: 10.16	T control lever
Tolerance mm	: + 0.15	position degree : 119.0
1000.2100		+ tolerance degree : +- 4.0
Rated speed rpm	: 350	+
guide sleeve		+ RATED SPEED
travel mm	2.00	rack travel mm : 10.70
Tolerance mm	: <b>←</b> 0.20	+ Rated speed rpm : 1145 + Tolerance 1/min : +- 5
Rated speed rpm	: 755	+ Tolerance 1/min : +- 5 + Check
guide steeve	. , , , ,	+ speed 1/min : + 10
travel mm	: 6.14	Special (Villa)
Tolerance mm	: + 0.25	rack travel mm : 4.00

Rated speed rpm		+ Tolerance mm	: <b>←</b> 0.20
Tolerance 1/min Check	: + 15	MEACUDEMENT	
speed 1/min	: +- 20	+ MEASUREMENT	
rack travel mm	: 0.50	+ Rated speed rpm	: 1100
Tolerance ma	: +- 0.50	Pressure hPa	: 340
Rated speed rom	_	+ rack travel mm	
		† Tolerance mm	: <b>←</b> 0.25
		F Pressure hPa	: 800
LOW IDLE		- + rack travel mm	
OW TOLC		+ Tolerance num	: 0.05
control lever			
position degree	: 73.0	FUEL DELIVERY CH	ARACTERISTICS
tolerance degree		+	
control lever		Aneroid pressure	)
position degree	: 20.0	∔ hPa	: 1500
tolerance degree	: <b>←</b> 4.0	Rated speed rpm Tolerance	: 700
Settina point w/a	out bumper spring	cm3/1000 strokes	: : 4.n
	<del></del>	+ Check tolerance	
Rated speed rpm	: 250	cm3/1000s.	: ← 6.0
CRT mm min.	: > 6.50	Ī	
		+ Aneroid pressure	<b>;</b>
Testing:		+ hPa	: -
Rated speed rpm	. 350	+ Rated speed rpm	: 500
rack travel mm		+ Del. quantity + cm3/1000 strokes	. 163.0
Tolerance mm	: + 0.30	+ Tolerance	. 105.0
		+ cm3/1000 strokes	: + 1.0
		- + Check tolerance	
TORQUE CONTROL		+ cm3/1000s.	: <b>←</b> 4.0
Rated speed rpm		+	
rack travel mm		†	
Tolerance mm	: ← 0.05	‡	
Rated speed rpm	: 700	+	
Rated speed rpm rack travel mm Tolerance mm	: 10.90		
Tolerance mm	: <b>←</b> 0.10	TOM IDLE	
NEDOTA (A) TITLE		- Rated speed rpm	: 350
ANEROID/ALTITUDE COMPENSATOR TEST		Rack travel in m	vm • / 10
COMPENSATOR TEST		+ Tolerance mm	
		Del. quantity	. +- 0.50
SETTING		+ cm3/1000 strokes	: 30.0
		Tolerance	
Rated speed rpm	: 1100	+ cm3/1000 strokes	
Pressure hPa rack travel mm Tolerance mm	: 1500 : 13.75	+ Check tolerance	
rack travel mm	: 13.75	+ cm3/1000s.	: +- 6.0
iolerance mm	: ← 0.05	Spreed	
Rated speed rpm	• 1100	+ Tolerance + cm3/1000 strokes	/ n
kated speed rpm Pressure hPa		+ Check tolerance	
rack travel mm		- cm3/1000s.	: 8.0
· MALL PLONAGE INCO		1 51107 1 50001	. 0.0

m : 1100 : 340 8.35 : +- 0.25 : 800 : 10.65 : ← 0.05 CHARACTERISTICS re : 1500 m : 700 es : - 4.0 : +- 6.0 re : -m : 500 es : 163.0 es : + 1.0 : **←** 4.0 m : 350 mm: 4.10 : **←** 0.30 es : 30.0 es :  $\leftarrow$  3.0 : +- 6.0 es: 4.0